CHAPTER TWELVE

THE PROCESS OF SHARPENING

Aims

- To describe in detail the whole process of sharpening, from initial grinding to final stropping
- To draw attention to the specific problems posed by particular tools
- To advise how to keep tools sharp
- To consider the layout of the sharpening area of the workshop

SHAPING AND SHARPENING

Here is an overview of what happens when you sharpen a carving tool. I am going to use the oilstones (Carborundum and Arkansas) as my model for benchstone sharpening. If you are using waterstones, ceramic stones or the like, you will need to allow for differences in grit: if they are coarser or much finer than the Arkansas stones, more stropping (by hand or power) may be needed. These other types of stone are considered in the next chapter; use the advice given there in addition to what is discussed here. (Power stropping is covered in Chapter 14.)

It is helpful to conceive of a preliminary stage of **shaping** a carving tool, before the sharpening proper. At this shaping stage:

- The overall contours and profile of the blade are formed, using the grinding wheel and the coarse benchstone and slipstones.
- Edges are squared off and the corners made true.
- Inside and outside bevels are set.
- Adjustments are made to get the line of light neat and even; at this stage it should be about the thickness of a line drawn with a ball-point pen.

After preparatory shaping comes the actual sharpening. Slipstones for the inner bevel, and benchstones for the outer one, gradually thin the visible edge while maintaining a flat bevel, a straight edge and so on. The white line attenuates to a hair's thickness, then disappears altogether. If the honing has been true and even, the whole of the line disappears at the same time. If not, a little more honing in specific places will remove any white specks or areas.

If you end up with a poorly shaped edge – through over-enthusiasm or inattention – it must be levelled off square again. Present the tool dead upright to the Arkansas stone and gently draw it over the surface a few times. The amount of white line showing and the state of the bevel then dictate the next stage: what coarseness of benchstone or slipstone is needed to resume sharpening.

When the white line has disappeared, it might be thought that the tool is sharp. However, pushing the cutting edge into a piece of scrap wood may cause the line of light to reappear in whole or in part. This is because a **wire edge** (or **burr**) – a feather-edge of metal – occurs where the sharpening of the inner and outer bevels meet, and hides the white line. Pushing the cutting edge into the scrap wood removes the wire edge at the same time as toughening up the metal and revealing the white line. A few more strokes of careful honing will eliminate the white line. Once more the edge is pushed into the wood, and touched up on the fine stones again if the line returns.

When the white light does not reappear, try cutting across the grain of another piece of wood, such as a good-quality softwood. The cut surface should be polished and without scratch marks. If scratches occur, a slipstone can be applied to the corresponding tell-tale spot of light, with a final touch-up on the benchstone. Try the cut again. When a clean, sharp cut has been satisfactorily made, the bevel and edge can be slicked up on the strop.

CUTTING PROFILES

Although there seems to be a large variety of shapes for woodcarving tools, there are in fact only two general profiles across the cutting edge – flat and curved – with a few combinations. Carving tools divide into these profiles in the following ways:

Flat profiles

- firmer chisels
- skew chisels
- V-tools and macaroni tools

Curved profiles

- straight gouges
- fishtail and other tapered gouges
- longbent gouges
- shortbent gouges
- backbent gouges

Combinations

- deep gouges (nos. 10 and 11).

Different approaches, but all using the basic procedures outlined above, will allow you to master all these different profiles.

The following sections deal with how to use the various pieces of equipment to work these profiles correctly; the specific needs of individual tools then follow.

BASIC PROCEDURES

Carvers differ in the way they use grinding wheels, benchstones and so on; they differ also in what final shapes and bevel angles they want. Beginners, too, will eventually develop their own preferences. The methods given here work successfully and are consistent with all that has previously been said regarding cutting profiles and angles.

GRINDING

Grinding wheels shape the carving tools initially, setting the bevel and edge. They may also be used to repair broken or damaged edges.

The grinding wheel should always turn *towards* the operator. This is a debatable point: it is sometimes recommended that the wheel should turn away from the operator. The reasons for recommending a direction of rotation towards the operator therefore need to be considered in some detail, since different directions of the wheel have differing effects on the tool edge.

With the wheel turning towards the user, metal is peeled back from the edge and towards the handle, leaving a small burr and a strong edge. A wheel turning in the opposite direction tends to draw the metal forward, producing more burr – which then tends to crumble off – and an edge which is less strong (Fig 12.1). The difference can be seen by comparing edges after pushing them into a piece of wood; this removes the wire edge and allows the stronger metal underneath to be seen.

A second point is that the surface of the wheel rotating towards the user bites into the metal more effectively than one turning away, which tends to bounce the tool more and give a less efficient cut. Wheels rotating away from the user may feel safer because, certainly, the edge cannot 'dig in' – but the correct presentation of the blade to the wheel never causes this result in any case.

Whichever way the wheel rotates, a carving tool can be presented to it in several ways, each of which serves a different purpose (Fig 12.2):

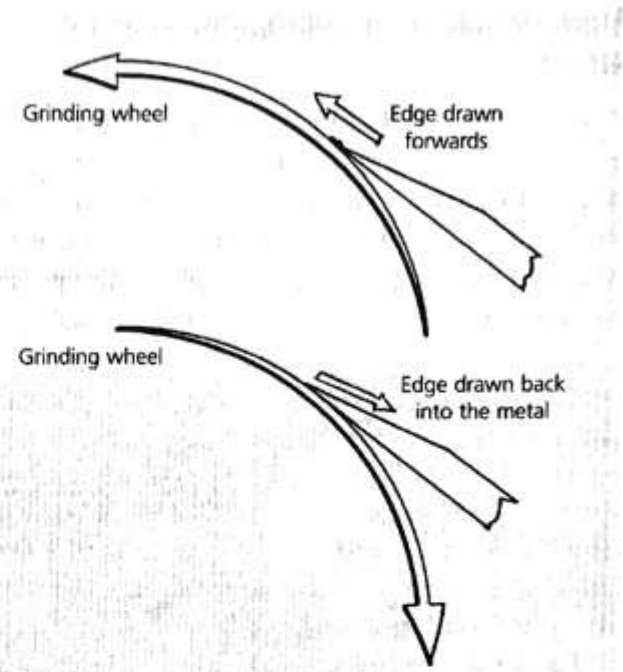


Fig 12.1 *How the direction of rotation of the grinding wheel affects the wire edge*

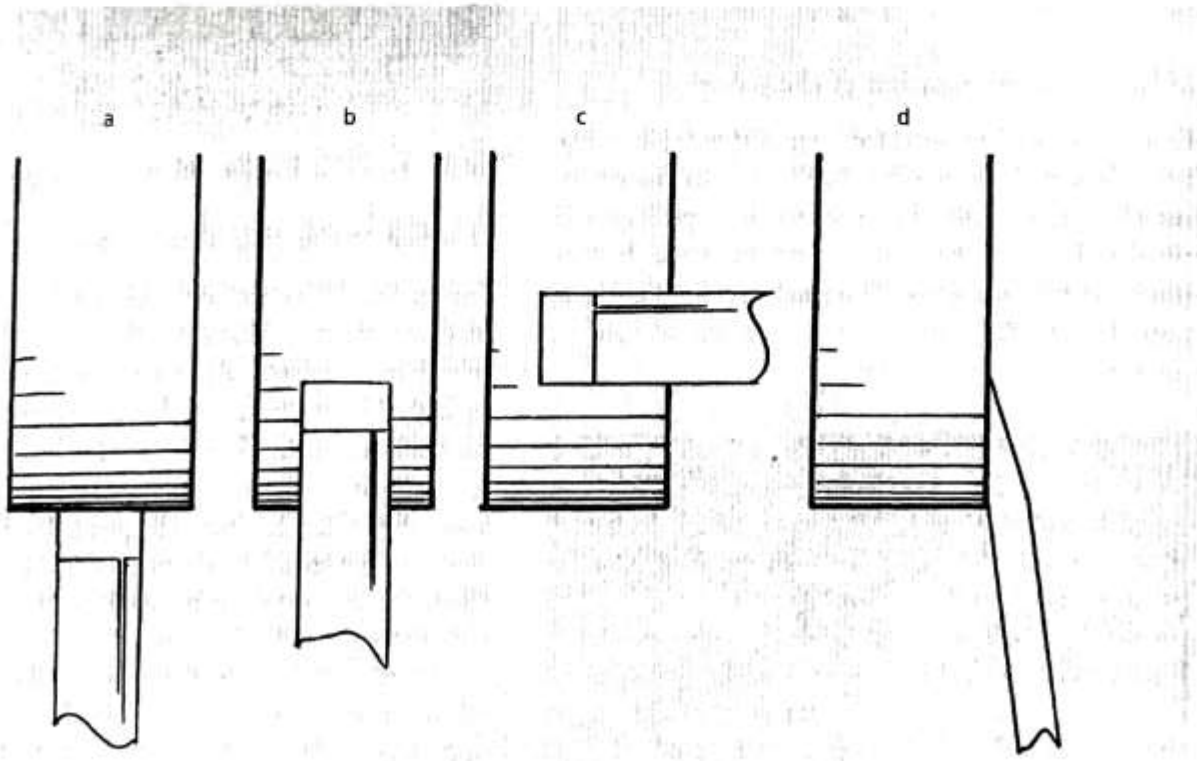


Fig 12.2 *Four ways of presenting a carving tool to the grinder: (a) perpendicular to the rotating wheel; (b) in line with the rotation; (c) square-on to the rotation; (d) to the side of the wheel*

Perpendicular to the cutting surface of the wheel

Tools are presented in this way (Fig 12.3) as part of the preliminary shaping – straightening or flattening the cutting edge from corner to corner. Be gentle and precise. Use the whole surface of the wheel where possible, and use the toolrests. Always wear eye protection.

Fig 12.3 *Perpendicular presentation (for clarity the grinder's perspex guards are swung up)*

In line with the rotation of the wheel

This is the usual method for setting the angle of the bevel. When a tool is offered in line with the grinding wheel (Fig 12.4), the bevel tends to pick up the circular shape of the wheel, producing the hollow grind mentioned earlier. The smaller the wheel, the more hollow the bevel. This hollowness can be removed on the benchstone.

Fig 12.4 *In-line presentation, with fingers on toolrest*

Square-on to the rotation

Offering the gouge square-on (at right angles) to the wheel (Fig 12.5), and rotating it from corner to corner while keeping the same angle of presentation, will produce a flat bevel. This operation involves holding the tool in your hands and steadying your hands in turn on the grinder's toolrest. It is not a difficult technique and, if a firm but gentle approach is taken, it is quite safe.

Fig 12.5 *Square-on presentation*

Touched to the side of the wheel

The quickest method of grinding flat bevels on a gouge or chisel is to start with the normal (in-line) presentation to the wheel and remove most of the unwanted metal from the bevel. Then make a final few passes with the tool presented square-on, removing any hollowness. You must rotate a gouge across the *whole* of its bevel surface, whatever the orientation to the wheel. Aim to grind smoothly, with any rotating coming from your wrist at the handle; try to produce a clean bevel with no facets.

For a chisel or V-tool, flatten the bevel by touching it *carefully and gently* to the side of the wheel, using the grinder's toolrest (Fig 12.6). Use only the lightest touch, as these wheels are not really designed to take sideways pressure. Look at the scratch marks on the bevel and let them guide your positioning of the tool.

Fig 12.6 Touching the carving tool to the side of the grinding wheel; only the lightest touch is permissible

Even though a grinder removes metal quickly, impatience may still lead to two unwanted consequences:

Overheating

With a fast, dry wheel, check the temperature of the blade frequently and never allow it to rise above hand-warm. This means adopting a rhythm of short bursts of light grinding, dipping the blade in cold water between times.

Over-grinding

The same regular approach will help prevent over-grinding – a pitfall to be aware of from the beginning. Try not to take too much metal off at a time, but work evenly. Take the white line of light at the edge continuously as your guide. Keep looking at its thickness and the scratch marks on the bevel to be sure of exactly where you are removing metal, and how much. Bear in mind the shape you are aiming at. If the edge loses its shape, you may need to level it off by presenting the tool perpendicularly and starting the process again.

METHOD

❶ Start by setting the cutting edge, from corner to corner, at right angles to the longitudinal axis, as shown already in Fig 12.3. Smooth and clean up this straight edge right at the start on the Arkansas stone.

❷ For gouges, set the outside bevel by grinding in line with the wheel, rocking the gouge from corner to corner (Fig 12.7) and making a

Fig 12.7 After the edge has been straightened, set the bevel of the gouge on the grinding wheel by smoothly rotating it at the correct angle from corner to corner. Keep checking the result. (For clarity the grinder's perspex guards are swung up)

uniform line of light with the heel and edge parallel. Finish at right angles to the wheel, flattening the bevel (Fig 12.8).

❸ For large gouges, small grinding wheels in drills or flexible shafts can create an inner bevel

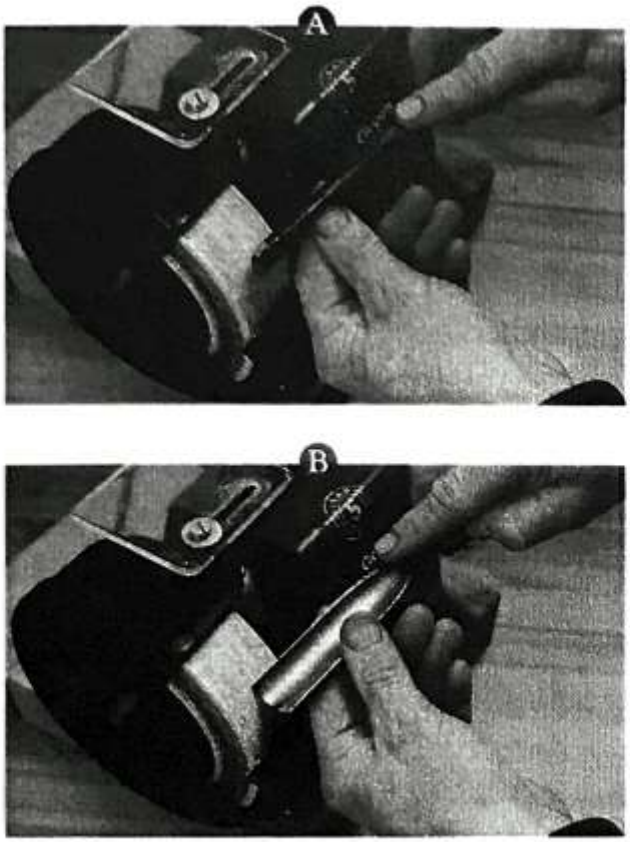


Fig 12.8 Flatten the bevel by offering it square-on to the rotation. Do this lightly and make sure your hand is supported by the toolrest. If preferred, this method can be used for all the bevel shaping

quickly, although coarse slipstones are more often used. The white line will thin down – keep it even and uniform.

❹ For flat chisels, the grinder's toolrests can be used to help set the bevel equally on both sides. Move the tool from side to side, covering the whole stone evenly. If you do not want to use the side of the grinding wheel (or even to grind square-on) to flatten the bevel, use the coarse benchstone.

❺ The tool should now be ready for the benchstones.

STONING (HONING)

Some beginners are unsure at what angle to present their chisel or gouge to the benchstone in order to get the right cutting angle. I'll give you here, right at the beginning, the key: you should simply present the tool to the benchstone *at the angle at which you want to hold it while you are carving wood* – that is, the cutting angle.

Imagine the surface of the benchstone to be wood; pretend to carve it with your gouge. You will see you are at the 15-20°, which is the 'natural', most controlled angle at which to carve. Keep this angle as you sharpen.

The two basic carving-tool profiles – curved and flat – are presented differently to the benchstones for sharpening:

- Flat chisels are presented in line (end-on) with the stone (Fig 12.9).

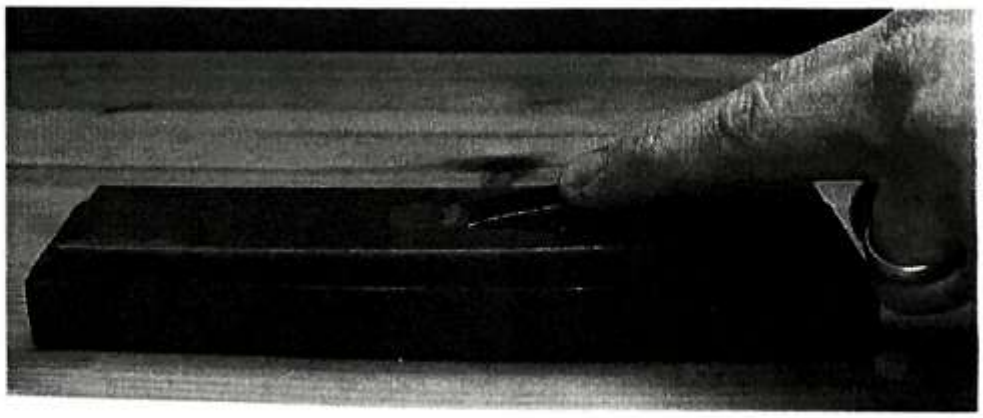


***Fig 12.9** Working along the benchstone with a chisel; the stone is orientated on the bench end-on to the user*

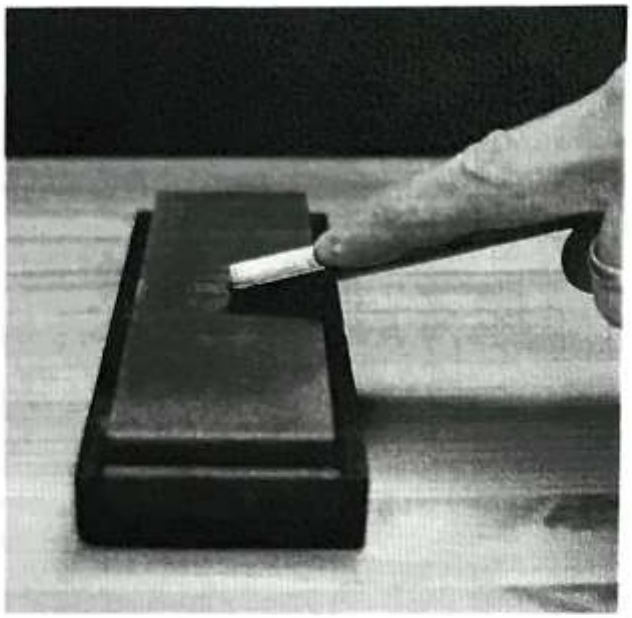


Fig 12.10 Working across the benchstone with a gouge; the stone is orientated on the bench square-on to the user

- Gouges are presented at right angles (square-on) to the stone (Fig 12.10).

Because of this differing orientation, mount the benchstones so that they can be turned around; do not fix them permanently in position on the bench with cleats.

The following procedures to get a straight edge from corner to corner of your tools apply to all types of benchstone; remember that oilstones must be oiled first.

STRAIGHTENING THE EDGE

For both chisels and gouges, start by holding the blade perpendicular – like a pencil – to the coarse stone and dragging it across the surface a few times (Fig 12.11). This is a more exact alternative to straightening the edge on the grinding wheel. In both cases, finish off the straight edge on the Arkansas stone; this produces a strong, smooth, clean edge with which to start; it also makes the line of light easier to see.

Whenever a cutting edge has become unacceptably wavy – or the corners lost – you can reinstate a fresh white line using this procedure. Try not to do this too often, as it is wasteful of material. Perhaps only one pass on the Arkansas stone may be needed to produce a clean edge from which to resharpen.

Fig 12.11 *Cleaning the edge of a carving tool involves offering it in a perpendicular position and pulling it along a flat benchstone. This is necessary each time you move to a finer stone, refining the edge from the coarser grit of the previous one*

All other ways of holding the tool for sharpening involve the correct use of the whole body. This is important to achieve the right effect. Carving tools are sharpened from the hips and legs, not the elbows.

HONING THE BEVEL: CHISELS

❶ Position the stone on the bench so that its end points away from you (i.e. end-on).

❷ If you are right-handed, hold the chisel handle in the right hand with the first two fingers of the left hand on the back of the blade, a little behind the bevel – vice versa for the left-handed.

❸ Place the heel of the chisel on the near end of the stone. Try to get a sense of the heel resting on the surface (Fig 12.12). Keep your elbows by your sides.

❹ Raise the handle until the bevel lies flat on the stone, and then a little more to bring in the actual edge. By raising and lowering the handle fractionally, learn to feel when the bevel lies truly flat on the surface.

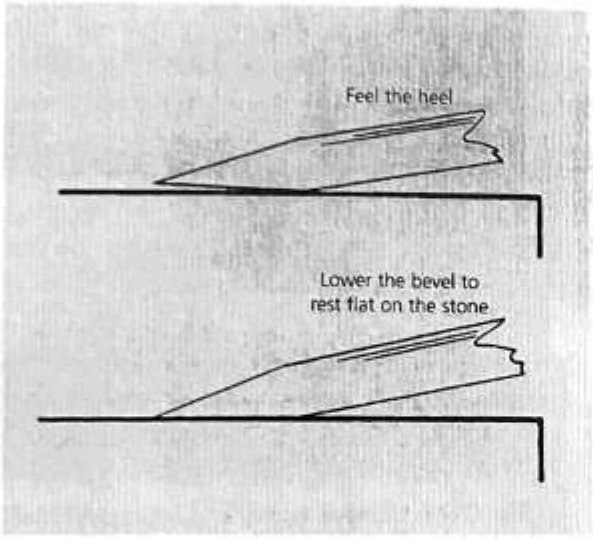


Fig 12.12 How to get a sense of the bevel resting flat on the surface of the benchstone

❺ Remember to present the chisel or gouge to the benchstone at the cutting angle – the angle at which you want to hold the tool while you are carving. Move the chisel forwards and backwards along the benchstone, maintaining this angle consistently and keeping the bevel flat. To do this, keep your elbows by your sides and rock your whole body backwards and forwards from relaxed knees. You will need one foot a little in front of the other. If you keep your body still and just push the blade backwards and forwards with your arms, there is a strong tendency to raise and lower the handle, rounding the bevel; this is called 'rolling the edge' (Fig 12.13). Keeping the bevel flat requires this whole-body approach.

❻ Use the whole of the stone's surface, but keep clear of the very edge. Be careful not to pull the chisel off the stone on the back stroke, as this inevitably damages the edge.

❼ After a little while, turn the chisel on to the opposite side and repeat the action. Counting the number of strokes on each side can help you

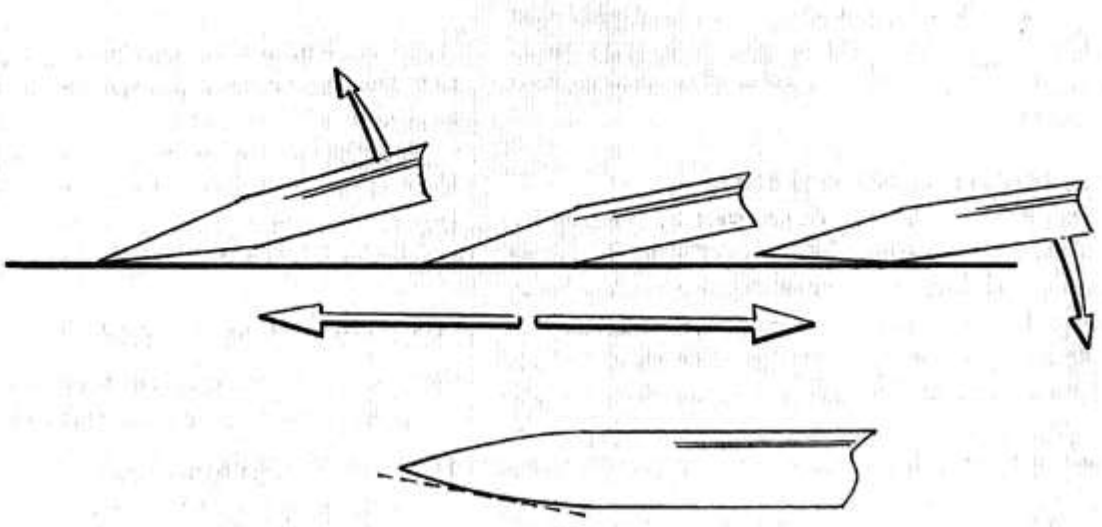


Fig 12.13 Lowering and raising the handle rolls (or rounds) the bevel

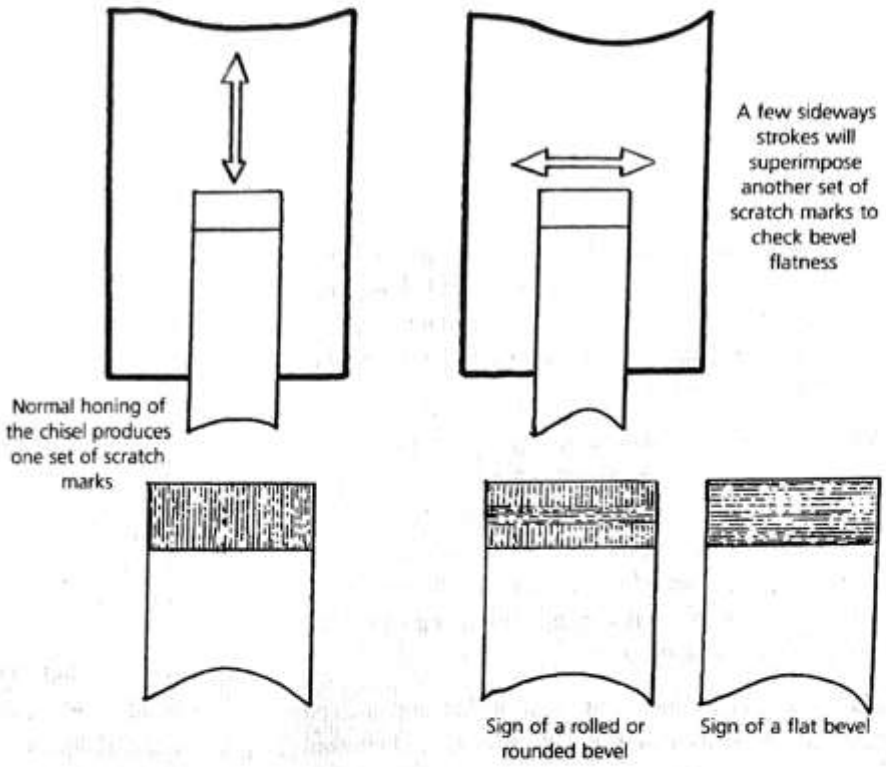


Fig 12.14 *Use the appearance of the bevel surface to monitor the flatness of the bevel*

keep the two bevels equal. Maintain a patient, steady rhythm. Watch the amount of oil on the stone, as the edge tends to push it off.

❽ Always look at the white line of light, keeping it uniform with sensitive adjustments to the point of contact between stone and metal. Do not be tempted to raise the handle to make the line of light disappear more quickly. If the line is thicker on one side, try not so much to tilt the tool as to *imagine* putting more pressure on that side of the blade. You may find that you have a built-in bias to one side or the other, and have to guard against this.

❾ Occasionally, still keeping the bevel flat, make a short sideways stroke *across* the stone rather than along it. Examine the scratch marks on the surface of the bevel. If the bevel has been rounded, a new mark will appear as a line across the middle. If the bevel is flat, the new mark will extend from edge to heel (Fig 12.14).

❿ Working through the stones in this way, and observing the white line and the bevel scratches, you can maintain an even, flat reduction of the metal to an edge which finally disappears.

HONING THE BEVEL: GOUGES

❶ Position the benchstone so that its side is facing you (i.e. side-on).

❷ Taking a medium-sweep (no. 6) gouge as an example: if you are right-handed, hold the handle in the right hand with the first two fingers of the left hand in the cannel or mouth

of the blade, about a finger-joint back from the edge. Vice versa for the left-handed.

❸ Place the heel of the outside bevel in the centre of the stone. Keep your elbows by your sides.

❹ Start by getting a feel for how the flat bevel rests on the surface of the stone. Raise the handle until the bevel lies flat on the stone, and then raise it a little more on to the actual edge. By raising and lowering the handle a little, learn to feel when the bevel is lying truly flat on the surface. With a little practice you will be able to go straight to resting the bevel flat on the stone.

❺ Remember to present the gouge to the benchstone at the cutting angle – the angle at which you want to hold the tool while you are carving. Start on the left of the oilstone with the gouge turned on to its right corner. The mouth of the gouge will be pointing towards the centre of the stone.

❻ The gouge must now move to the opposite end of the benchstone. In doing so, you must also rotate the blade so that it comes to rest on its opposite corner, with the mouth pointing once more towards the centre. This constitutes one sharpening stroke.

❼ Without lifting the gouge from the surface, reverse the movement so the gouge comes to rest on its right corner, over on the left of the stone once more (Fig 12.15). This completes a cycle of two strokes. Notice that the direction of rotation goes *against* the direction of travel, efficiently biting the metal into the stone.

❽ The gouge is rocked like this, from one end of the benchstone to the other and back again, in regular, even strokes. Use the whole cutting surface, but avoid both a figure-of-eight pattern – which rounds over the bevel – and the very edge of the stone.

❾ Present the bevel *flat* all the time. To accomplish this, keep the elbows in, rotating the tool handle from the wrist and forearm. Shift the weight of the body from one leg to the other, keeping your back upright and your knees relaxed and slightly bent. This posture has something of the judo stance and balance about it, and should feel comfortable and unforced. If you work from the elbows only, the bevel will invariably become 'rolled' or rounded.

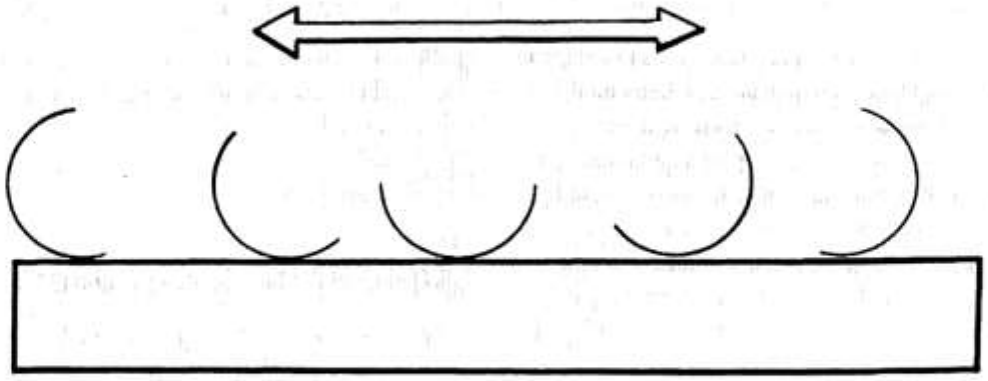


Fig 12.15 *The direction and rotation of a gouge while being sharpened on a benchstone*

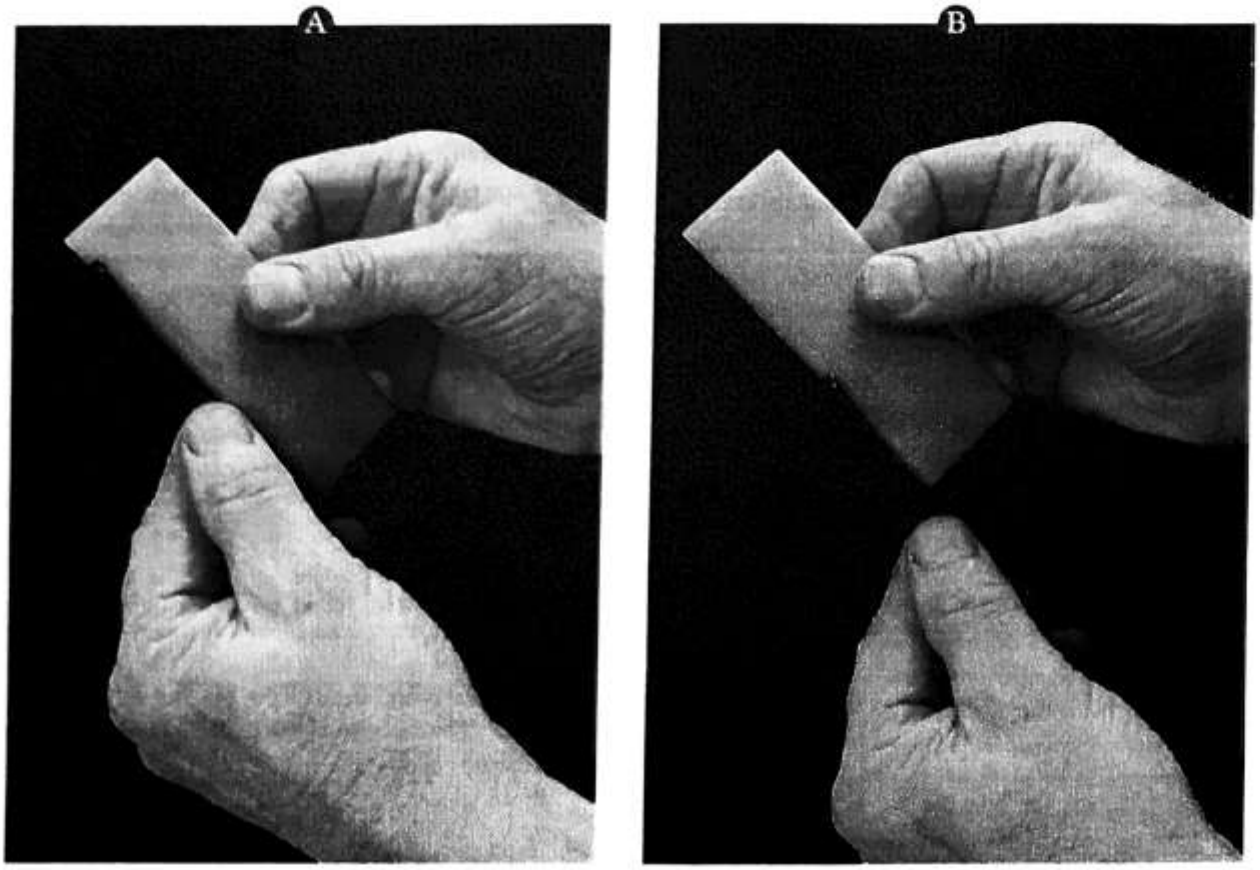


Fig 12.16 *Slipstones are used in a partnership with benchstones, rubbing backwards and forwards while maintaining the same angle to the blade. The upper hand moves, not the lower*

This is the basic technique for gouges, to which some extra points need to be added:

- Use the slipstones with the benchstones to work the inner bevel or remove the wire edge (see pages 187–9). In the sharpening process, the honing of the edge alternates between benchstones and slips (Fig 12.16). Slipstones are often used first, where an inner bevel is required.
- Regularly check the state of the white line. If it becomes thicker in one part compared with another, limit the rotation of the blade for a few strokes and work more specifically on the thicker part. Conversely, if some part of the white line becomes unduly thinner, avoid honing that part of the edge. This may mean you have to divide your honing into two separate strokes – lifting the gouge to avoid the thin part in the

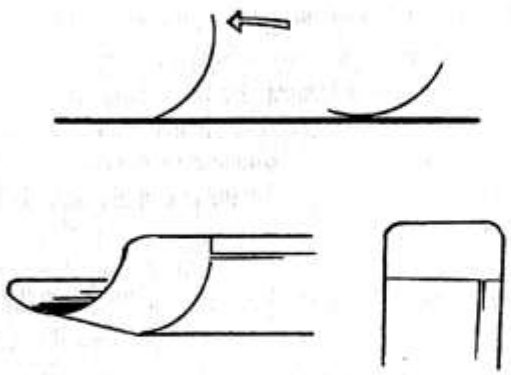


Fig 12.17 *Rotating the gouge too far will hone away the all-important corners*

middle – until the white line is returned to a uniform thickness.

- To sharpen the whole bevel, the corners must be included, but it is very easy to over-rotate the handle and sharpen them away (Fig 12.17). Extra care must be taken with the corners at the end of the stroke, so that the gouge is rotated neither too much nor too little. Additionally, all the finger pressure on the gouge tends to lie on the corners at the point where it changes direction, so pressure needs to be eased a little at this point.
- The amount of rotation that a gouge needs depends on its sweep – the amount of curve it has. Flat gouges require only a slight turn at the wrist; quicker gouges a lot more. If the wrist action becomes uncomfortable, you may have to hone the edges of the quickest gouges in sectors which you then carefully merge. With flexible wrists this is not normally necessary up to the semicircular (no. 9) gouges, but the U-shaped gouges can be more of a problem. They are best dealt with as a combination of flat and curved bevels; details will be given in the section on individual tools (page 204).
- By constantly monitoring the line of light at the edge, and adjusting which parts of the bevel are being honed, a straight, even contour will result. As with the chisels, it is a good idea to make a short stroke with the gouge moving at 90° to the normal direction. The subsequent scratch mark will show you whether the bevel has become rounded or remained flat. As the grade becomes finer, changes in the abrasive marks on the bevel can also be used to monitor the angle at which the bevel is presented.

Some carvers sharpen their gouges by rubbing the bevels on a benchstone in the same direction as that described above for the chisel. As the gouge is moved backwards and forwards it is rotated from one side to the other, often in a figure-of-eight pattern. I have always found it difficult with this method either to produce a straight edge with corners, or a flat bevel; it also wears the stone in the centre more quickly.

SLIPSTONING

As a general rule, use the same type of stone on one side of the edge as on the other. So, when working the outside bevel on the coarse Carborundum benchstone, use a coarse Carborundum slipstone on the inside – matching grade to grade as the abrasive stones get finer.

Match the curves and angles of the slipstones to the curves and angles of the tools as closely as possible. Bear in mind that you can change slipstone shapes, and use smaller slips on larger tools.

METHOD

By way of example, let us put an inner bevel to a medium gouge.

❶ Rest the round back of the blade on the edge of the bench with about 1in (25mm) projecting upwards and at an angle of about 45° away from you.

❷ Using some oil – which can be taken up from the benchstone – place the slip into the mouth of the gouge. Hold it between your fingers and thumb at a shallow angle. *Make sure your fingers clear the sharp corners of the blade*. A right-handed person would normally hold the slip in the right hand.

❸ With firm pressure, rub the stone backwards and forwards; if appropriate, work from side to side and diagonally as well. To keep the angle of the inner bevel flat, avoid rocking the slip up or down (Fig 12.18). Work evenly across the edge and include the corners, but be careful not to over-sharpen them.

❹ Do not let more than half to two thirds of the slipstone project from the blade. To put this another way, always keep a substantial amount of the slipstone in-cannel (Fig 12.19). This means working in short, rapid strokes. If the slipstone projects more than this, there is a danger of its coming off the blade completely.

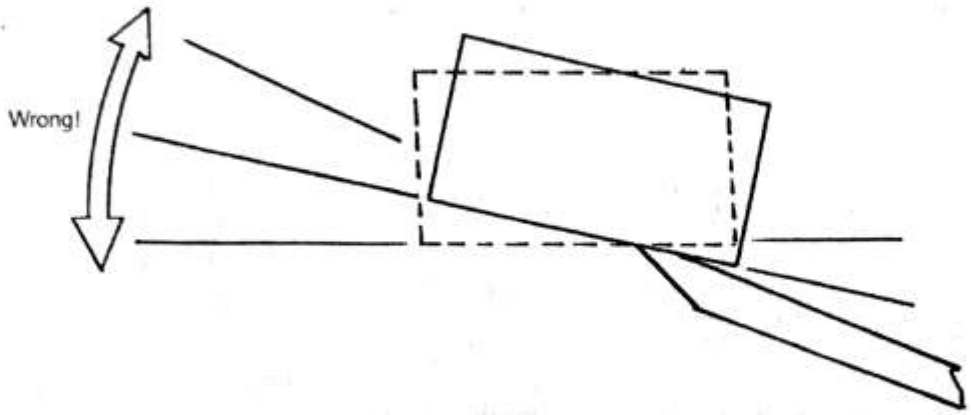
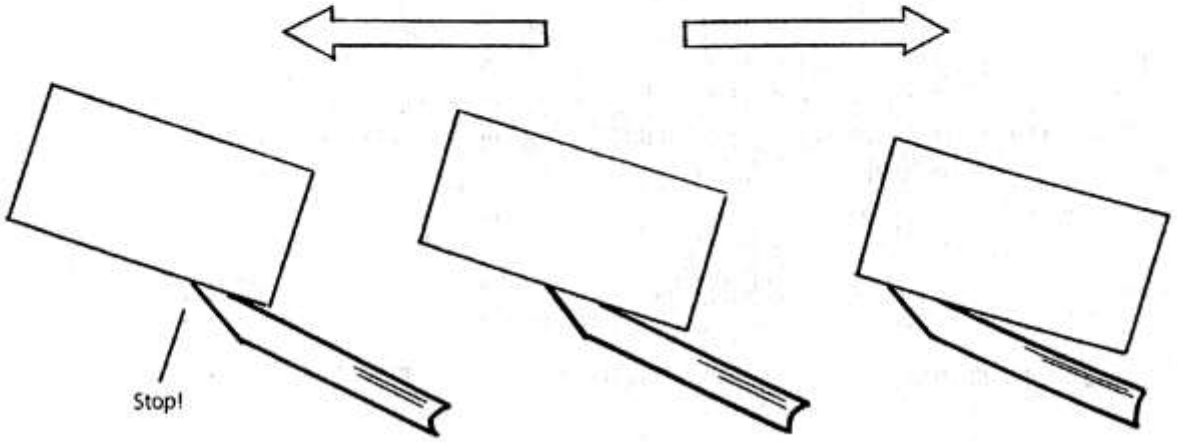


Fig 12.18 Do not rock the slipstone up or down *as it is moved backwards and forwards*

Almost invariably, the sharpening hand starts a return stroke, only to strike the sharp cutting edge of the tool with the slipstone – or with your fingers.

5. Work in conjunction with the benchstone: drawing the inner bevel back with the slipstone, cleaning and working with the benchstone, returning to the slip, and so on. The line of light on the cutting edge is, as always, the guide to where the slip needs to be applied.

An alternative is to rest the gouge in one of your hands and not against the bench. For a right-handed person, the gouge would be held in the left. Allow the hand holding the handle of the gouge to relax so that the round back of the blade nestles in the angle between the thumb and first finger – this hand is supported by holding the elbow in to the body. Work the slipstone with the other. This method is more suited to smaller tools and the final, more delicate stages of slipstoning. It allows the work to be held a little closer to the eye.



Another approach that suits some carvers is to fix the movement of the stone and rub the gouge over it, rather than the more usual reverse situation. This method is not recommended, as visibility of the edge is not so good.

STROPPING

METHOD: CHISELS

1. Line up the benchstrop end-on, supporting the near edge with the fingers (of the left hand, for a right-handed person).
2. The strop is *always* used with the blade being drawn *towards* the user, the edge dragging so as not to cut the leather.
3. Hold the chisel around the shank with the right hand. The first two fingers extend along the metal, but keep them back from the cutting edge roughly the length of a finger joint.
4. Place the bevel flat on the furthest part of the leather and, with firm pressure, draw the tool along the strop towards you (Fig 12.20). Try to maintain the angle and work on the *bevel* – not the edge, as that will take care of itself.
5. At the end of this stroke *lift the chisel clear* and place the bevel flat on the strop at the far end again. Draw the blade towards you for a second stroke.
6. This action is repeated a few times on one side of the chisel, then the blade is turned over for an equal number of strokes on the other side. You can strop the tool quite vigorously, in which case it makes a slapping sound on the strop as it is placed for each stroke.

METHOD: GOUGES

1. With the strop end-on, hold the gouge as you did the chisel, with the extended fingers in-cannel.
2. Start at the far end of the strop with the gouge turned on to one corner. Draw the blade towards you with firm pressure at the same time as rotating the wrist to rock the gouge on to its other corner (Figs 12.21 and 12.22). The gouge arrives at the near end of the strop facing the opposite way. Keep the bevel flat by maintaining the angle of presentation.
3. Lift the gouge clear of the leather, and return it to the far end for a second stroke. This time start the gouge on the opposite corner and

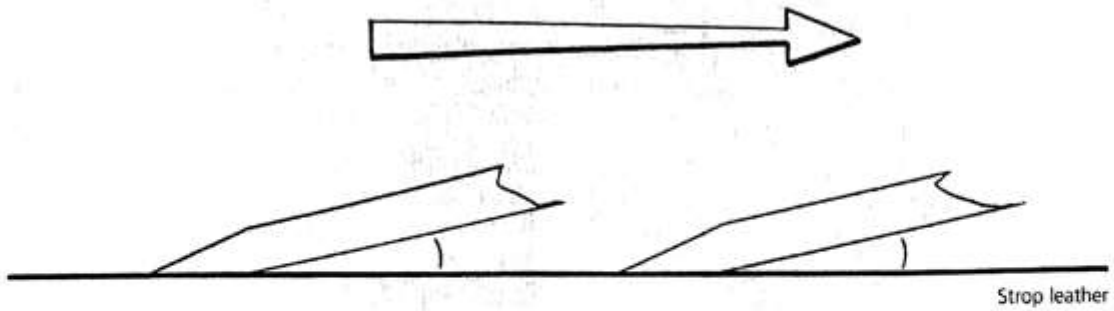


Fig 12.20 When stropping, maintain the same angle and always drag the edge to avoid cutting the leather

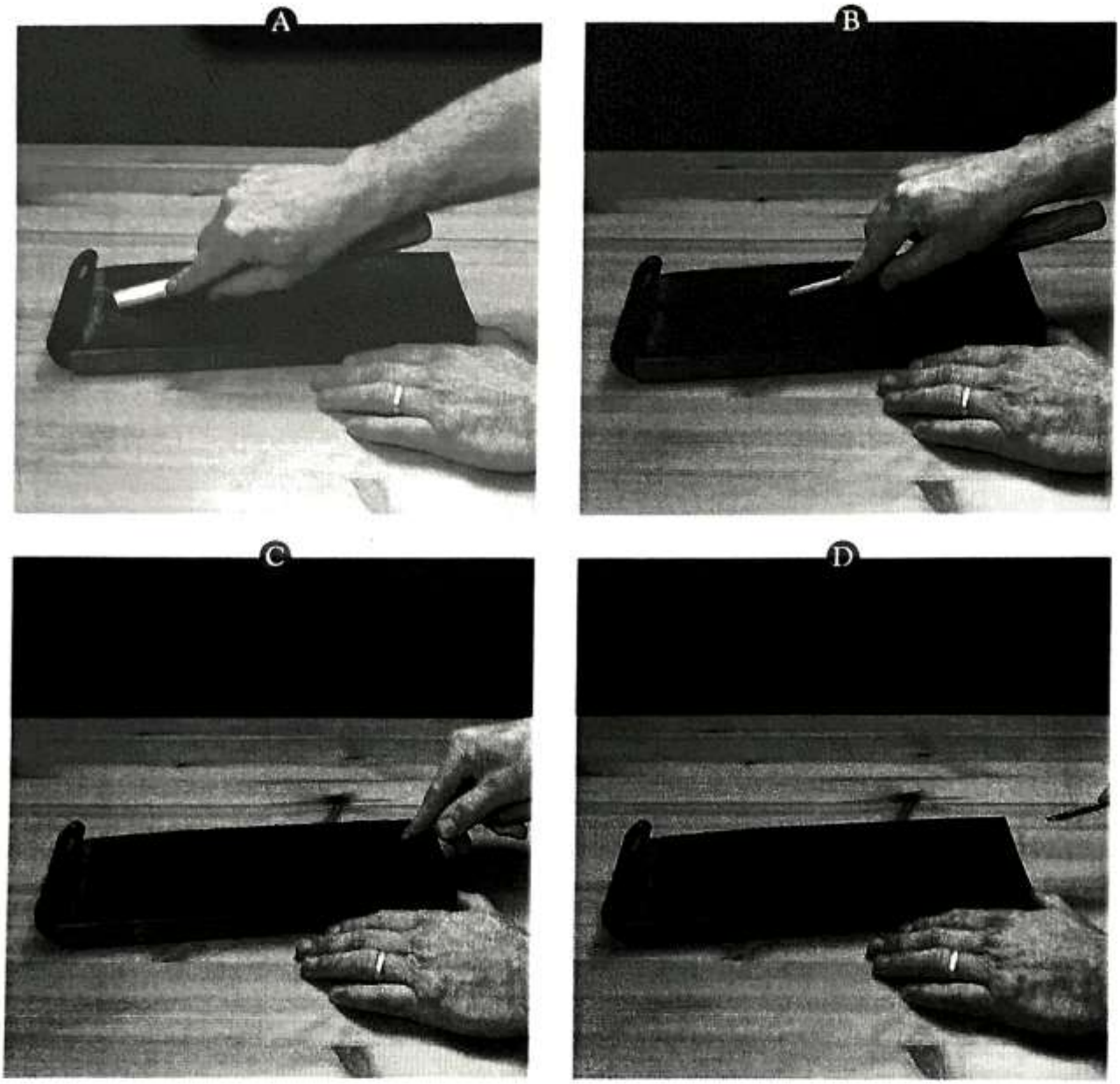


Fig 12.21 *Using the benchstrop involves rotating the gouge as it passes along the leather, while keeping the bevel consistently flat on its surface; lift it off the leather for the return stroke*

repeat the rotating stroke; this completes one cycle.

❹ Repeat the cycle several times. Do not land heavily on the corners.

❺ After a few cycles of stropping, use the slipstrop on the inside.

❻ Only a few passes are needed to maintain the edge; stropping can be quite a brief business.

SAFETY

There are two dangers in using the benchstrop:

Cutting the leather

Avoid running the tool into the strop by making sure the blade is lifted clear of the leather surface on the return strokes. Develop a habitual action that automatically ensures this.

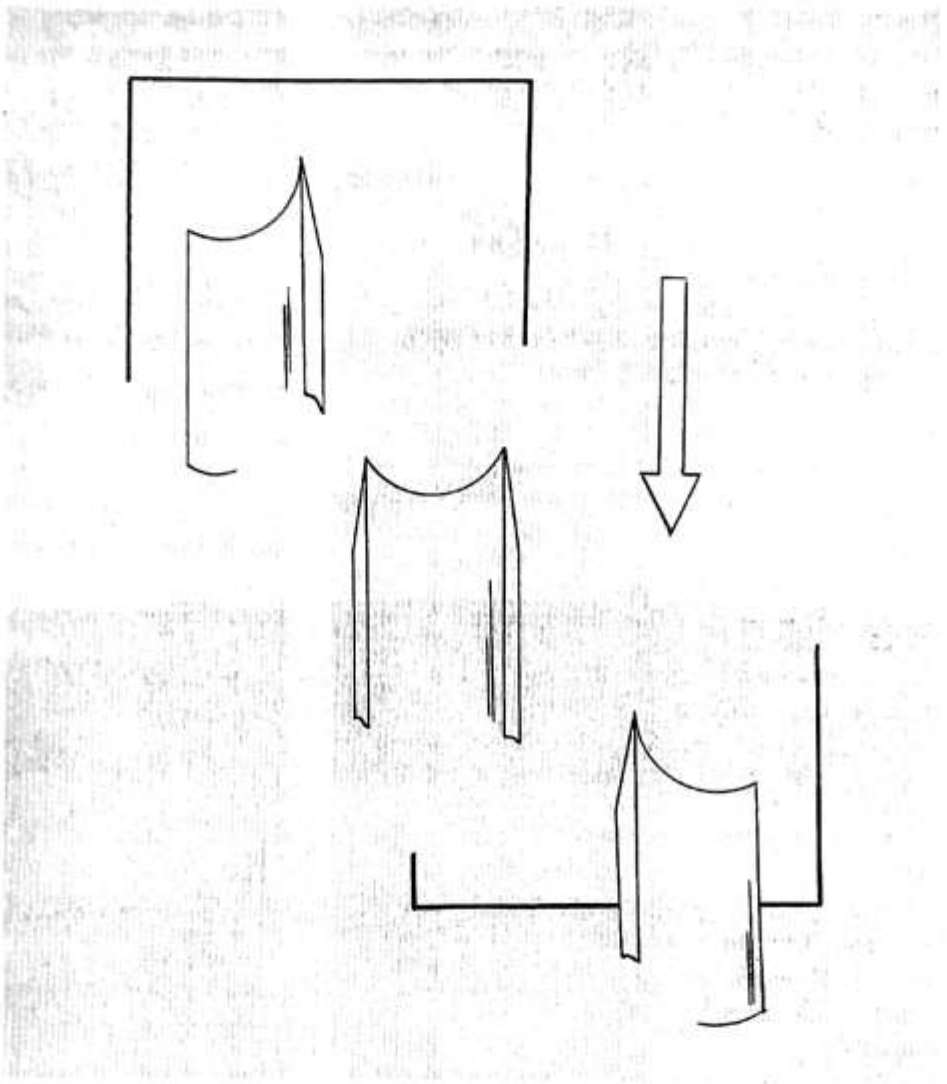


Fig 12.22 As the gouge is drawn towards you on the strop, it must be rotated to cover the full surface of the bevel, including both corners. Change the direction of rotation with alternate strokes

Cutting your hand

There is a danger of cutting the hand that is steadying the strop – the thumb, especially, can be caught by a negligent forward stroke of the carving tool returning through the air (Fig 12.23). Since the edge is now extremely sharp, this danger must be taken seriously.

The strop needs some steadying, since it tends to be pulled towards you as you use it. Pins beneath the mounting board (see page 172) will largely anchor it, and only a light touch of the hand will be needed to steady it. *This steadying hand must be positioned to the side of the working area, out of the path of the blade entirely*. The position can be to one side, at either end of the strop.

***Fig 12.23** The hand that steadies the strop must be kept out of the way of the returning cutting edge*

By experimenting with the safest, yet most relaxed hand position – and by being mindful of the movement of the tool – the danger of cutting yourself can be eliminated.

SLIPSTROPPING

1. Position the gouge or V-tool as when using slipstones.
2. Again, the slipstrop must move *away from* the cutting edge. Place it on the inside bevel and push it forward with firm pressure into the air and beyond the edge (Figs 12.24 and 12.25).
3. Return the slipstrop *clear of the cutting edge* and position it for a second forward stroke.

As with slipstones, be aware of the fingers and the very sharp cutting edge.

INDIVIDUAL TOOLS IN DETAIL

These notes should be read in the context of what has been said previously about:

- the shapes and profiles that carving tools need
- the use of the shaping and sharpening equipment.

Study and refer to this information first. I have tried to avoid repetition as much as possible but, for the sake of clarity, some is unavoidable.

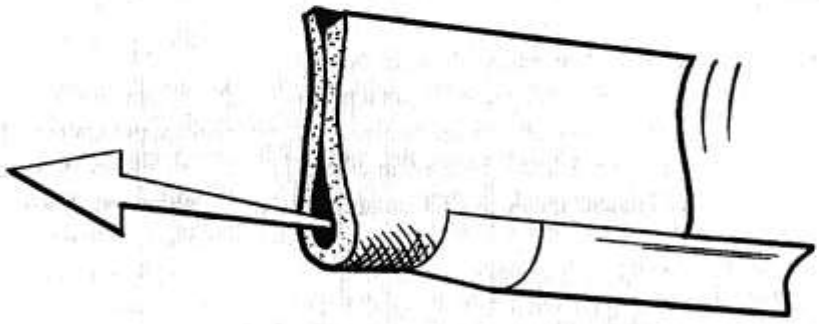


Fig 12.24 Slipstrops must only be pushed out of the cannel, to avoid cutting the leather

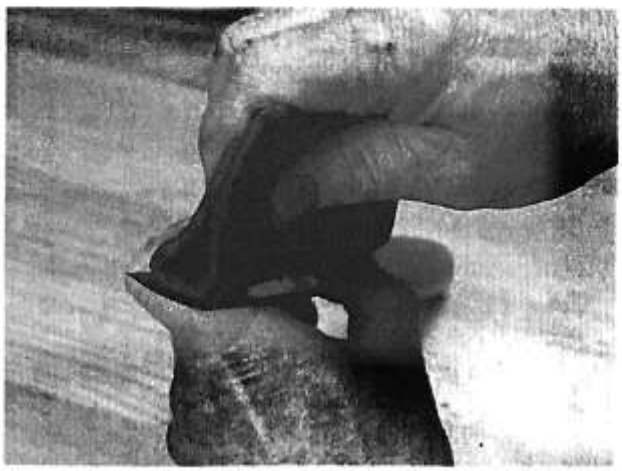


Fig 12.25 A leather slipstrop will deform to fit the sweep of the gouge as it is pushed forward

With accurate grinding it is possible to go straight up the scale to the finer stones and save time. The skill of knowing which stones to use, and when, comes with practice.

Decide first on your bevel angle. As a guide, an overall angle (including an inside bevel) of 20–25° is a useful, average one. In practical terms, a length of bevel between two and a half and three times the thickness of the blade would be approximately right.

- Without an inside bevel: all the angle is taken on the outside.
- With an inside bevel: make the inner bevel between one quarter and one third the length of the outer bevel.

- With a carving chisel: the angle and amount of bevel are divided equally between both sides.

It may be helpful in the beginning to make a wooden template of what the sharpening angle looks like in order to get some feel for it. In practice, no experienced carver estimates these angles to accurate degrees; it is done more by feel, and whether the tool cuts as you want.

FLAT CHISELS

❶ Grind the edge square and establish the corners. The coarse benchstone may be preferred to the grinder, especially for the finer tools. The white line of light should be unbroken along the whole length of the edge.

❷ Make one or two perpendicular passes on the oiled Arkansas stone to clean and refine the white line.

❸ Grind the bevel flat to the required angle on both sides of the chisel, with the heel parallel to the cutting edge. The edge should be in the centre of the blade (Fig 12.26). Make the white line an even ½in (1mm) thick at this stage.

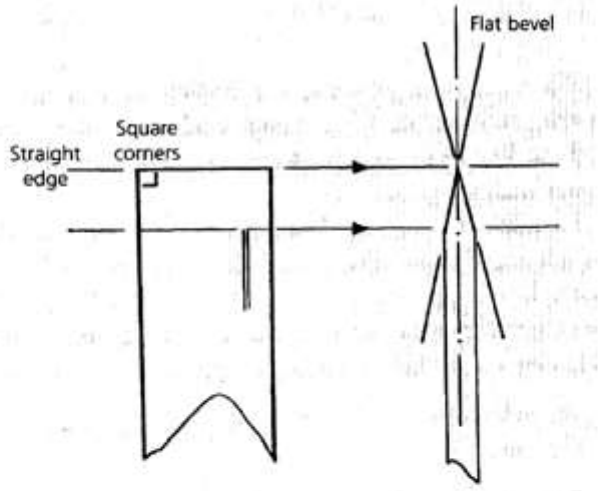


Fig 12.26 Features of a correctly sharpened flat chisel

Use the side of the grinding wheel to remove any hollowness in the bevel, or leave this until the next step.

❹ Set the oilstone end-on, present the bevel flat and hone both sides. Repeat equally on both sides, regularly checking the white line and bevel scratches.

❺ When the line of light reaches hair thickness, push the edge into a piece of clean scrap wood to remove any burr. A little more work may then be necessary on the coarse stone to return the line to uniformly hair-thin.

❻ Set the Arkansas stone end-on and proceed in the same way. After every ten strokes on each side, push the blade into scrap wood to emphasize the line of light and strengthen the edge. As the line thins, push the edge into the wood every five, then every couple of strokes. Do not raise the handle to make the line disappear more quickly, but proceed patiently.

❼ When the line is no longer visible, and does not reappear when the edge is pushed into the wood, try carving across the grain of a piece of softwood. Look to see if the line returns, or if there are scratch marks on the cut surface, and touch up the edge appropriately on the Arkansas stone.

❽ Once a polished, clean cut has been produced, strop both sides equally and then carefully wipe the blade.

SKEW CHISELS

❶ Grind the skew angle first: the acute angle at the tip of the blade should be 40–45° for general use, around 30° for more delicate work. Present the end of the blade to the wheel so as to keep a straight line along the edge. This grinding will make the edge look wedge-shaped, narrowing to the long point (Fig 12.27).

❷ Make one or two perpendicular passes of the edge on the Arkansas stone to clean and refine the white line.

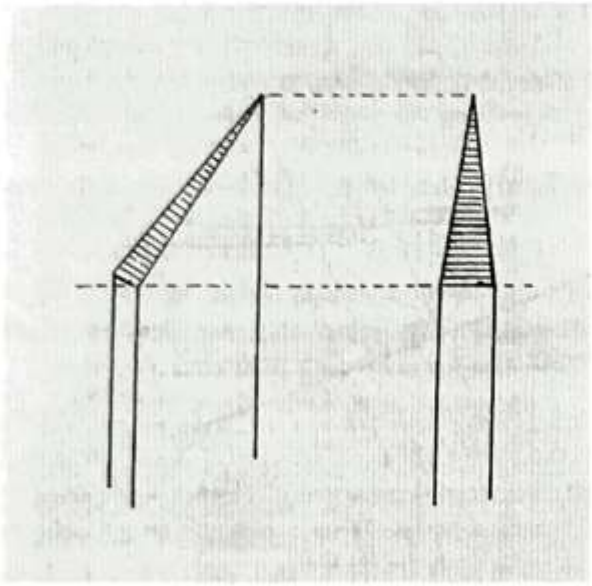


Fig 12.27 The initial setting and lengthening of the skew angle makes the chisel look wedge-shaped

❸ Grind the bevel flat, with the heel parallel to the cutting edge. To do this, position the handle at a corresponding angle to the side of the wheel. Work more on the thicker end of the wedge, and remember that *the point can be overheated very easily*. Keep the cutting edge in the centre of the metal (Fig 12.28).

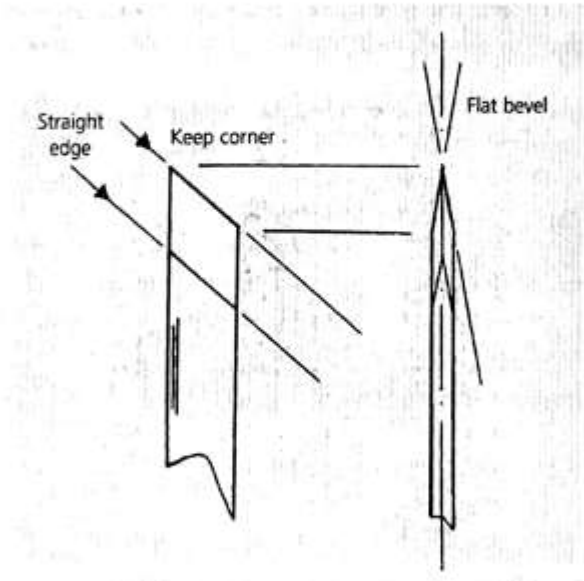


Fig 12.28 Features of a correctly sharpened skew chisel

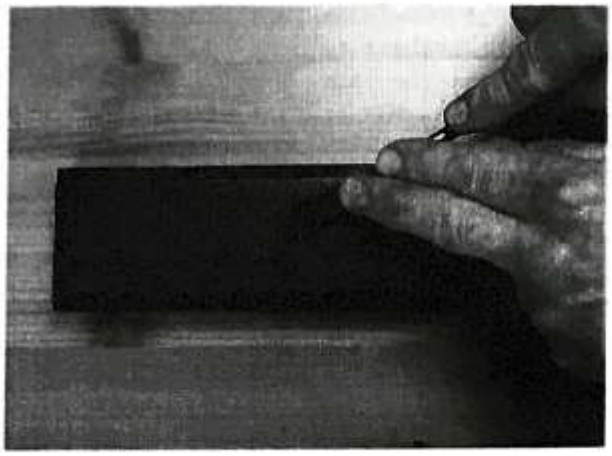


Fig 12.29 When the cutting edge of the skew is moved across the stone, the handle must be angled over the side (for clarity the oil is not shown)

❹ The skew is offered to the benchstones so that the edge orientates in the same way as the edge of a firmer chisel – across the width of the benchstone. The handle angles out over the side of the stone, to one side for one bevel, the opposite side for the other (Fig 12.29).

❺ Hone the skew in the same way as a firmer chisel: two fingers exerting gentle pressure on the blade, and working on both sides uniformly. Keep an eye on the white line and avoid over-sharpening the long point – so removing the most important part of the tool. Test the white line in scrap wood.

❻ Strop by holding and moving the skew as if it were a firmer chisel – but at an angle, as before – and carefully wipe the blade. Test the edge by slicing across the grain of a piece of softwood.

V-TOOLS

Consider the V-tool or parting tool as two flat chisels, joining to form a cutting angle. There are three bevels to deal with: the central keel, and the chisel on either side. Of the three bevels, it is the keel which is the most important: not only does the keel form the principle cutting angle, but *the way the keel itself is formed* from the thickness of the metal on each side decides how well the tool cuts.

You must, of course, have keen cutting edges along the two chisels and at the apex of the V, at the keel. It is crucial that the cutting apex and edges of the V-tool – the parts that leave the finished cut – are properly sharp, otherwise a ragged cut is inevitable.

A lot of problems are caused by faults in the tools themselves: different wall thicknesses on either side, for example. If the sides of the V-tool are of uneven thickness, or the cannel is not lined up accurately, matching the two side bevels can be difficult. If you find that equal matching is impossible, but the bevels are nevertheless flat and the cutting edges straight, then the tool should still be usable. Do check this aspect of your V-tool and make sure it is well made; if you are running into unaccountable problems, this may be the cause.

As has been mentioned before, the apex of the V is not actually a sharp angle but slightly rounded, both inside and out (Fig 12.30). This is not that noticeable unless you examine the groove cut by the V-tool closely. The rounding-over allows the tool to negotiate corners more easily. The keel itself remains straight and at the usual cutting angle of 15–20° (Fig 12.31). Keep the corners: they are used in deeper cuts sometimes. However, they are the least useful part of the tool; the apex of a V-tool will cut very well despite missing corners.

Fig 12.30 *Close-up of the end of the V-tool; the apex of the V is not a sharp angle but slightly rounded*

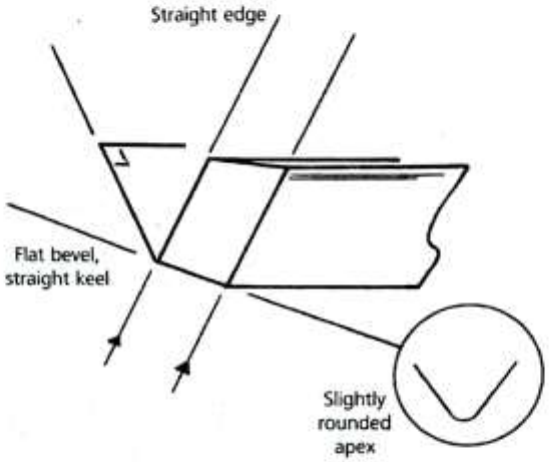


Fig 12.31 *Features of a correctly sharpened V-tool*

Specially shaped angle-edged slipstones will clean off the wire edge and work any inner bevel into the angle itself; different stones will be needed to match the different angles of V-tools (Fig 12.32). Only a small inside bevel is needed; it can be worked back every time the tool needs touching up. The slipstone must fit exactly into the angle; it is all too easy to

Fig 12.32 *The three different V-tool angles will need corresponding angles on the slipstones*

work the slip to one side of the angle rather than in the centre, which creates a notch (Fig 12.33). Most of the problems encountered in sharpening these tools arise from improper shaping at the grinding stage, or inaccurate application of the slipstones.

It is not too difficult to sharpen a V-tool if you proceed step by step:

1. Grind the edges square, with the V-tool perpendicular to the grinding wheel. If the tool was supplied nosed, the edges will now look like two wedges, thickening to the angle (Fig 12.34*a*).
2. Make one or two perpendicular passes on the Arkansas stone to clean and refine the white line.
3. Set the keel angle by presenting the tool *across* the wheel; an average angle would be a bit less than 20°. Reduce the thickness of the white line at the apex to about 1/16in (1.5mm). The outside corner of the angle will look cut off (Fig 12.34*b*).
4. Set the bevel angles on the wheel, treating each side of the tool in turn like a chisel and rendering the white lines to a thickness of about

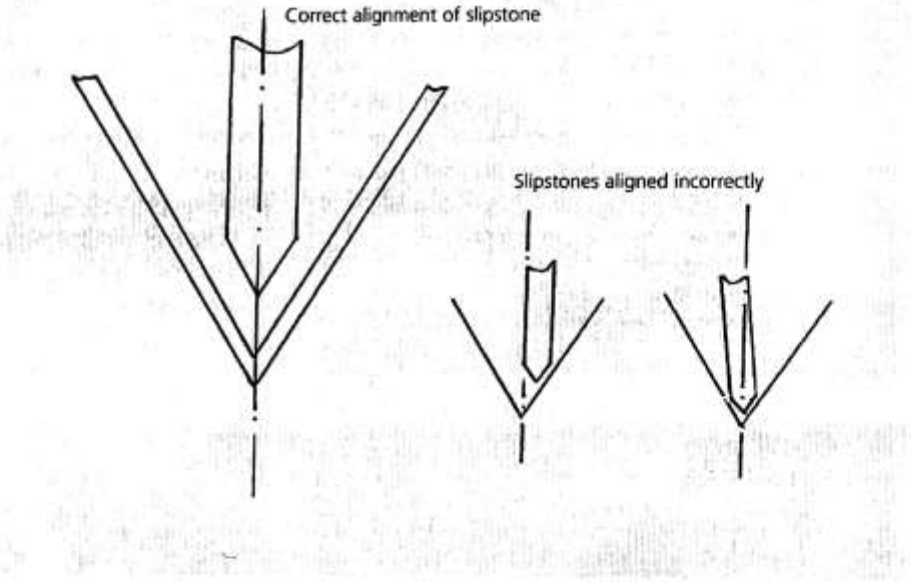


Fig 12.33 *It is important to align the V-tool slipstone exactly with the apex when working the angle; it is easy to rub to one side and notch the edge*

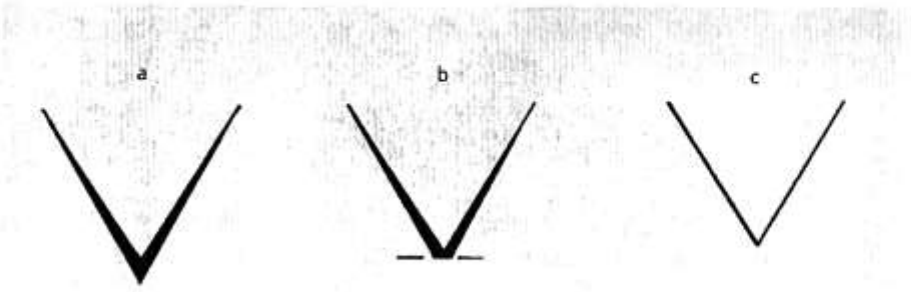


Fig 12.34 *With the edges but not the apex ground, the tip of the V-tool looks like two wedges (a). When the angle of the keel has been set, the apex will look cut off (b). As the bevel is set, the edge is reduced to a uniform thinness (c)*

1/32in (1mm). The heel should be parallel with the cutting edges and the V apex aligned dead in the centre. End-on, the angle will still look slightly cut off.

5 Position the benchstones as for the flat chisel, and select the appropriate angled slipstone for the inside. Taking each side of the V in turn, start reducing the thickness of the edge with the Carborundum, then the Arkansas, stone (Figs 12.35 and 12.36). There is always a tendency to over-sharpen the corners, as they are thinner than the central parts. If the line thins at any point, slightly turn the wrist to exert a little more pressure on the thicker part of the edge and away from the thinner part. Take great care to keep the bevels flat, and check the white line and bevel scratches to make decisions as to exactly how the tool should present to the stone. Push the edge into scrap wood as with the chisel, but do not rock the tool from side to side.

Fig 12.35 *Treat one side of the V-tool like a chisel . . .*

Fig 12.36 *. . . then the other (for clarity the oil is not shown)*

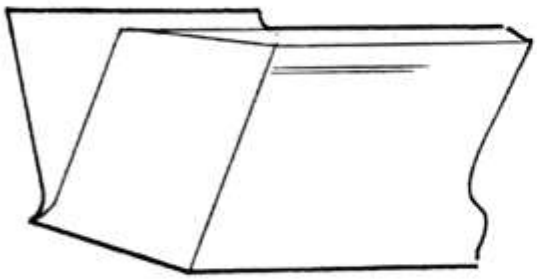


Fig 12.37 *A hook may be left towards the end of sharpening; this is caused by the thicker metal at the angle where the two sides join*

Fig 12.39 *Rounding over the keel of the V-tool by careful rubbing on the benchstone. As always, present the bevel flat and keep checking the edge by its line of light*

6 As the white line attenuates and disappears (Fig 12.34c), a point of light will be left at the apex, probably projecting a little with a hook (Fig 12.37), because the metal is thicker at the junction of the two sides. To remove the hook, turn the Arkansas stone side-on and lay the keel flat on the surface, with the blade at its proper 15–20° cutting angle. Rock the tool, like a gouge, from side to side and very carefully hone the keel until the spot of light has gone (Figs 12.38 and 12.39). Overworking the keel will cause the apex to dip back. Final spots of light can be removed with the slipstone (Fig 12.40).

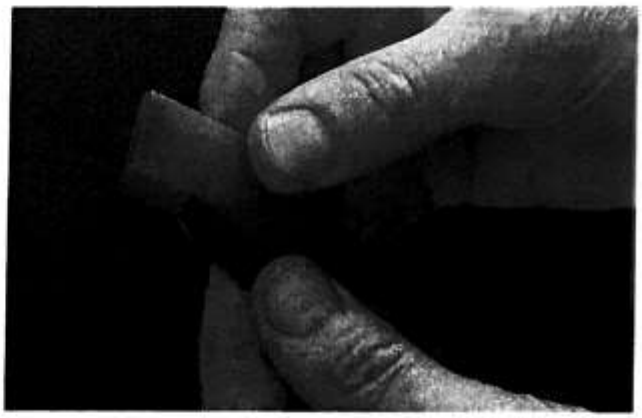


Fig 12.40 *Using an angled slipstone to finish the inside of the V-tool*

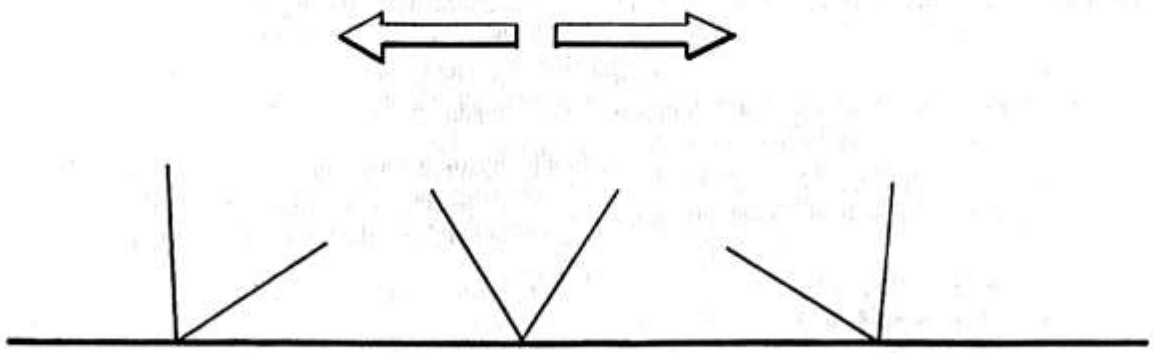


Fig 12.38 *Remove the hook by honing the keel at the correct cutting angle. Keep the keel flat on the stone and check the white line*

Fig 12.41 *A specially made V-tool slipstrop. Keep your fingers clear*

7. If the V-tool ends up with the edge dipping at the apex, wavy, or in other ways unsuccessfully sharpened, one or two perpendicular strokes of the Arkansas benchstone will cut the edge back and reveal the white light from which to start again.

8. Test the edge by cutting across softwood grain as before; strop inside and out (Fig 12.41) and carefully wipe the blade.

THE KEEL

Now turn the tool upside down to look at the keel; it should be a straight line, of course, but additionally it should be a smooth, narrow line, in line with the axis of the blade. If it is out of line, then the V-tool will tend to veer to one side like a supermarket shopping trolley. This fault is not common, but may arise from uneven wall thickness. A much more common problem, specific to some makers, is a keel which is more of a cone-shape: the point of the cone is at the cutting apex, but as you pass back from the apex the metal thickens.

If you have a narrow keel, you can stop here and enjoy your carving. A conical keel, however, is definitely a problem: its wedge-like shape causes the blade to rise up out of the cut because the radius of the cone is larger than that of the initial groove made by the apex of the V. Shallow cuts require no more effort than with a narrow-keeled V-tool, but it is much harder to sink the conical keel into the wood because it is continually resisting – especially if the metal is thick, or the tool is a large one. The following alteration should bring a very significant improvement:

1. Look again at the conical keel. You will see that there is a pyramidal point on either side at the base of the cone, where the two side walls meet the keel. It is here that you need to remove metal equally on both sides (Fig 12.42).

2. Place these points carefully on a coarse benchstone (or the side of the grindstone) and carefully remove metal, forming a facet at this point. You may find it easier to use the corner or side of the grinding wheel, like a knife. Aim to be neat. Get both sides the same, resulting in a parallel, narrow keel, but *stop short of the cutting edge*, which is already sharp.

3. Quite a lot of metal may need to be drawn back, after which you can merge the facet with the rest of the blade metal on either side.

4. When you have removed the metal and reduced the cones to a narrow keel, check the cut in the wood. Smooth off the facets on the fine stones and make sure the keel is smooth and slightly rounded. Your V-tool should now be ready for use.

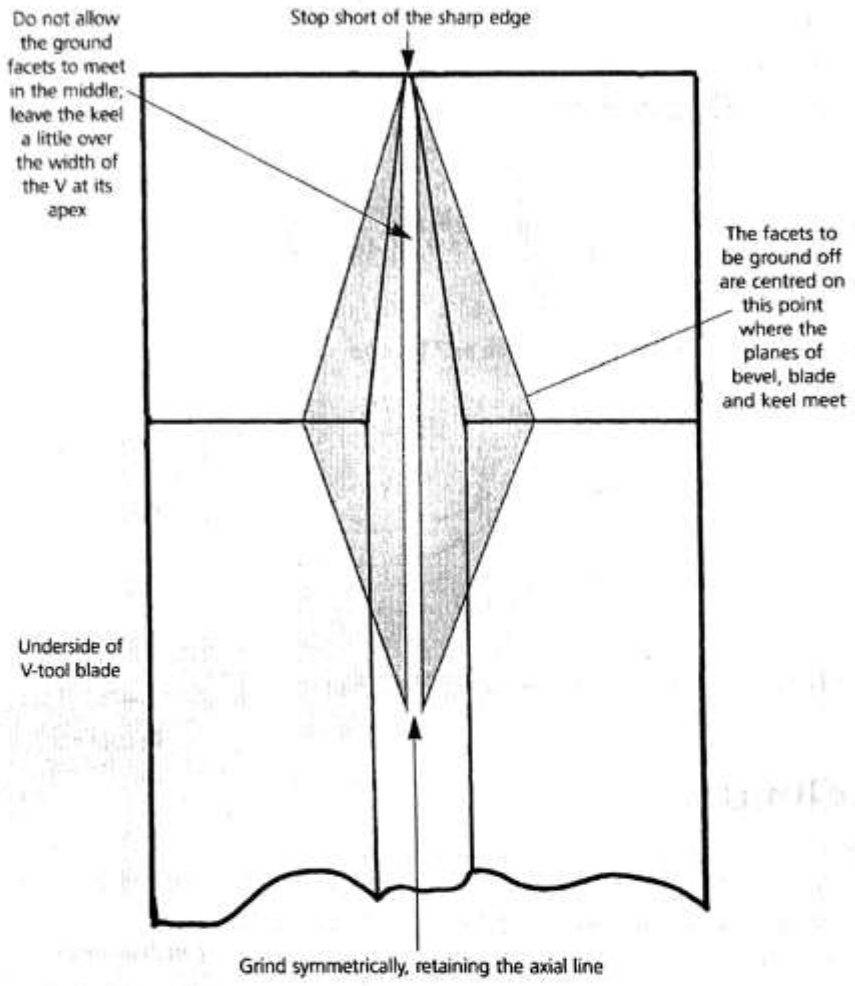


Fig 12.42 *Correcting a conical keel: the feel and cutting properties of the V-tool are greatly improved by removing the excess metal in the shaded area*

Macaroni tools are treated in similar fashion: regard them as three chisels joined at two corners which are very slightly rounded. A matching square-edged slip is needed to work the inside.

BENT CHISELS

Sharpen the edges of bent square-end and skew tools in the same way as the straight versions, but with a main bevel in contact with the wood, and a smaller bevel on the upper side. Although the cutting edge is not absolutely in the centre, it is still thrown towards the middle of the metal. The bent V-tool needs little inside bevel.

The main problem comes in holding these tools so that you can present them to the benchstones correctly. Hold the blade like a pencil to form the main bevel (Fig 12.43). Work the reverse, or upper, bevel by turning the tool over and using the end of the stone (Fig 12.44). Place the stone near the edge of the bench so the tool handle hangs free of the bench surface. A little trial and error may be needed.

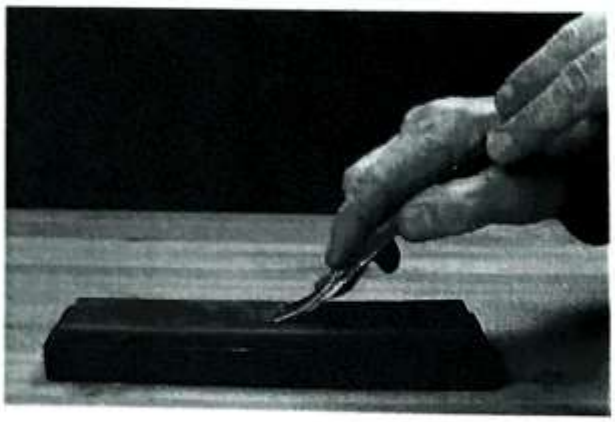


Fig 12.43 A frontbent chisel can be held like a pencil

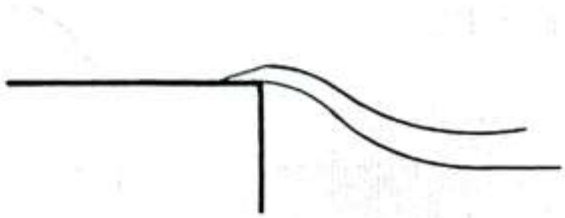


Fig 12.44 Working the upper surface of a bent chisel

GOUGES

1. Grind the cutting edge straight and square, keeping the corners. Leave an even white line of at least ⅛in (2mm), or less if no inside bevel is wanted.
2. Make one or two perpendicular passes on the Arkansas stone to clean any jaggedness and smooth the white line.
3. Start by working the inside bevel with a coarse slipstone held at a shallow angle, working it evenly from corner to corner. Do not be afraid of working the inside bevel; aim to throw the cutting edge towards the centre of the blade.
4. Shape the outside bevel on the grinding wheel.
5. Position the coarse Carborundum benchstone side-on. Present the bevel flat and sharpen from left to right while rotating the gouge (Fig 12.45), as described on pages 184–7. The amount of

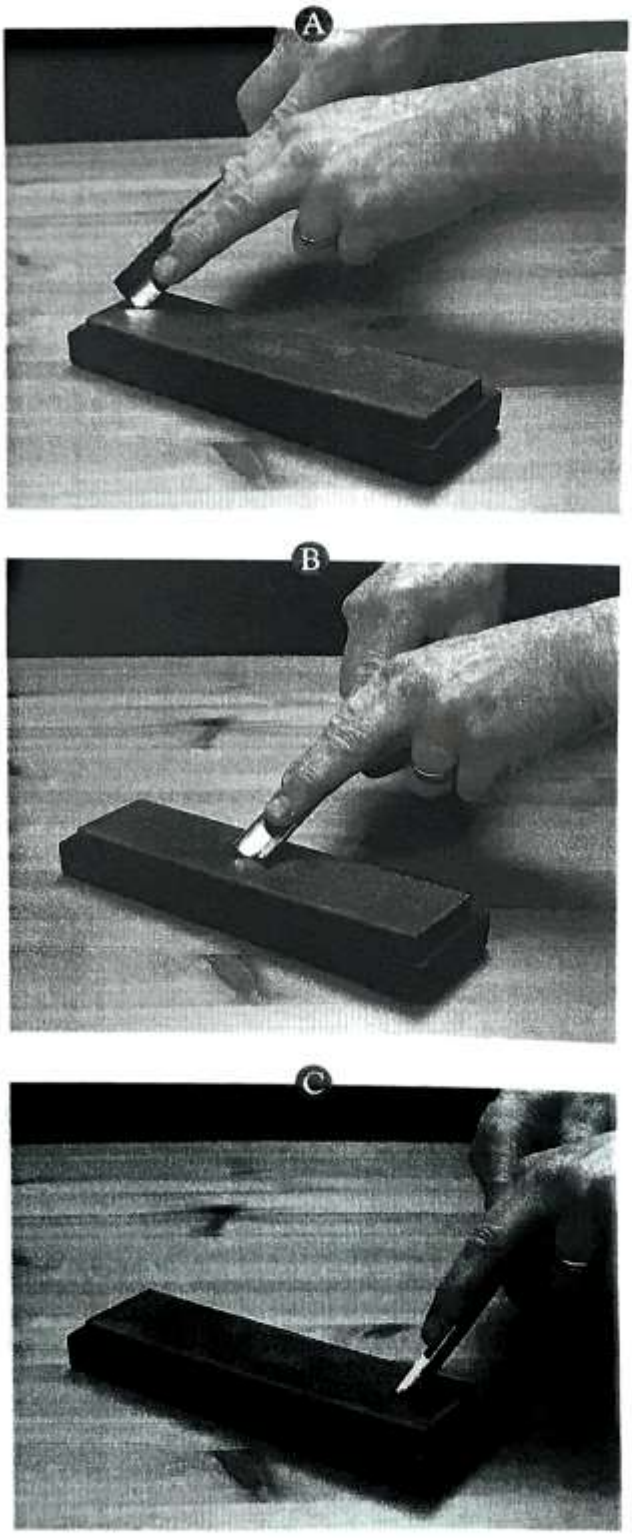


***Fig 12.45** Rotating the gouge from one end of the benchstone to the other. The motion is then repeated in the opposite direction, without lifting the blade from the stone*

rotation will depend on the sweep. Keep an eye on the line of light, reducing its thickness to about ½in (1mm) (Fig 12.46).

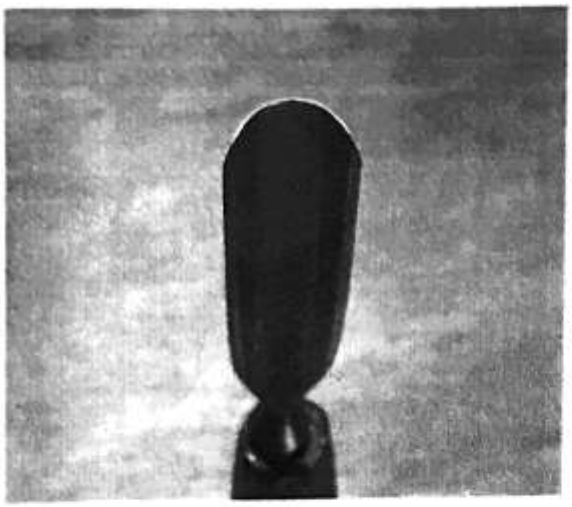


Fig 12.46 An even and thin line of light is visible when the tool is held at the right angle

6. Go now to the Arkansas benchstone and slipstones. Keeping the bevel flat, work the inside and outside bevels alternately, leaving any part of the edge which is thinner than the rest and specifically removing metal from the thicker parts. Occasionally push the edge into a piece of scrap wood to remove any wire edge.
7. As the line starts to attenuate, alternate a few sharpening strokes with pushing the edge into the wood. All the line should disappear more or less at the same time, leaving sharp corners and a straight edge (Fig 12.47).
8. Cut some wood across the grain and see how the resulting cut appears. If there are scratches, look for tell-tale spots of light on the cutting edge and remove them with a slip or benchstone as appropriate.
9. When a clean, polished cut is produced, strop the inside (Fig 12.48) and outside and carefully wipe the blade.

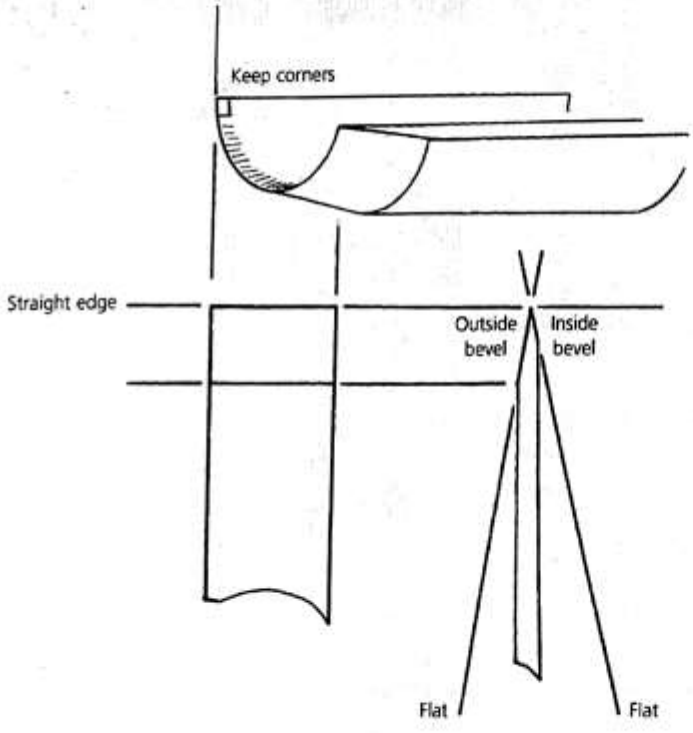


Fig 12.47 Features of a correctly sharpened gouge

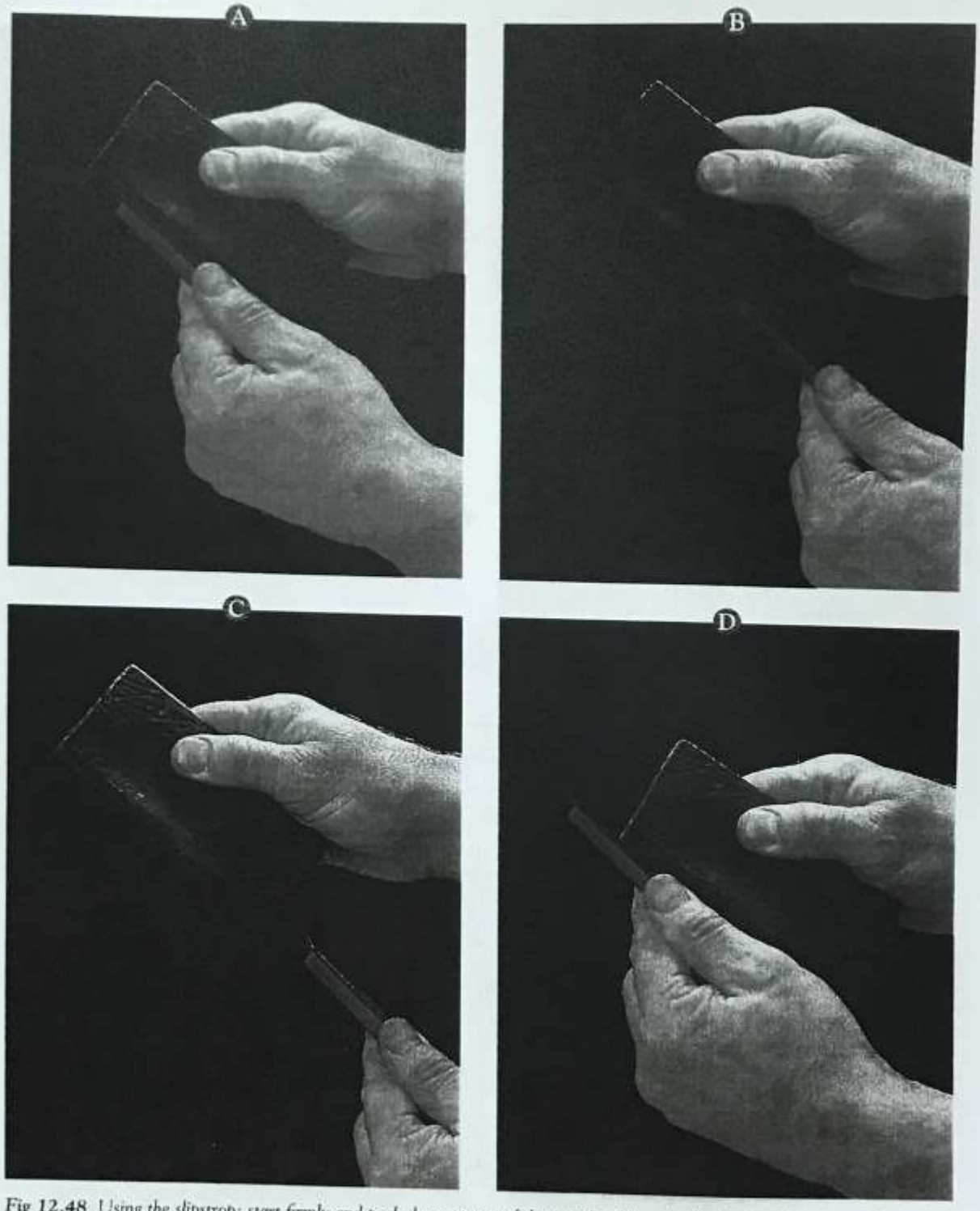


Fig 12.48 *Using the slipstrop: start firmly and push the strop out of the mouth of the tool, keeping it at the same angle. Return through the air for a second forward stroke*

U-SHAPED GOUGES

These are the veiners and fluters: deep flat-sided gouges (nos. 10 and 11). It is helpful to treat them partly as chisels and partly as gouges – a combination of approaches – while being careful to marry the effects of each (Fig 12.49).

After squaring off the end and cleaning the white line on the Arkansas stone, grind one flat side, then the other, then the curve in between. Keep the bevels flat and the edge as a straight line. Sharpen on the benchstones in the usual order, turning the stone from a chisel (end-on) to gouge (side-on) orientation. The slipstone that is used for the inside curve can be slid up and down the sides also.

Keep observing the white line of light, particularly at the juncture of the straight and curved sections, as these points can easily be over-sharpened and made to dip back.

It is quite possible to sharpen U-shaped tools entirely like gouges, rotating them fully 180° at the wrist, but be careful not to lose the corners by over-rotating from the flat sides.

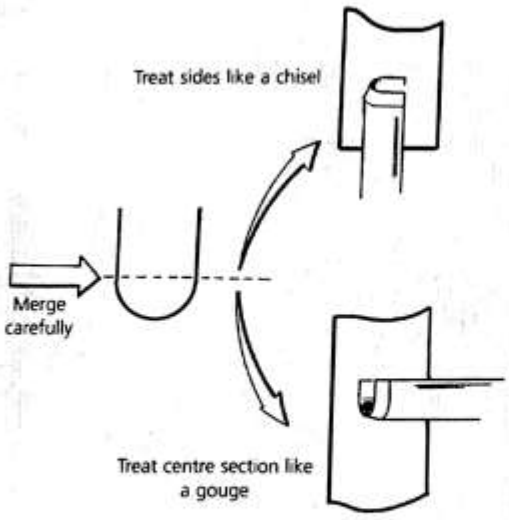


Fig 12.49 U-shaped gouges can be dealt with as if they were a combination of chisel and gouge

LONGBENT AND SHORTBENT GOUGES

Treat these tools in the same way as the parallel-sided gouges, but use the slipstones only to remove the burr from the inside edge (Fig 12.50), not to form an inside bevel – which is not a particular advantage here. Only a small part of the slipstone can be used; otherwise it will foul on the bend in the shank (Fig 12.51).

Fig 12.50 Using a slip to remove the burr on the inside edge of a frontbent gouge

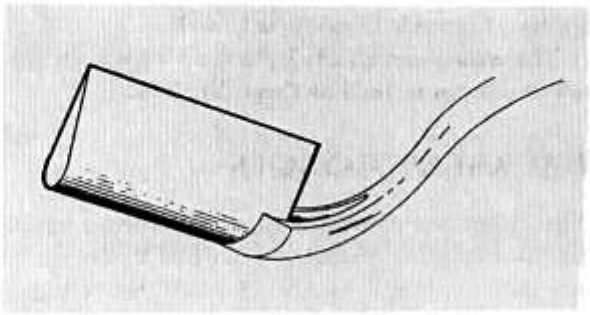


Fig 12.51 Only the end of the slipstone can be used with a shorthent tool, as it fouls the crank

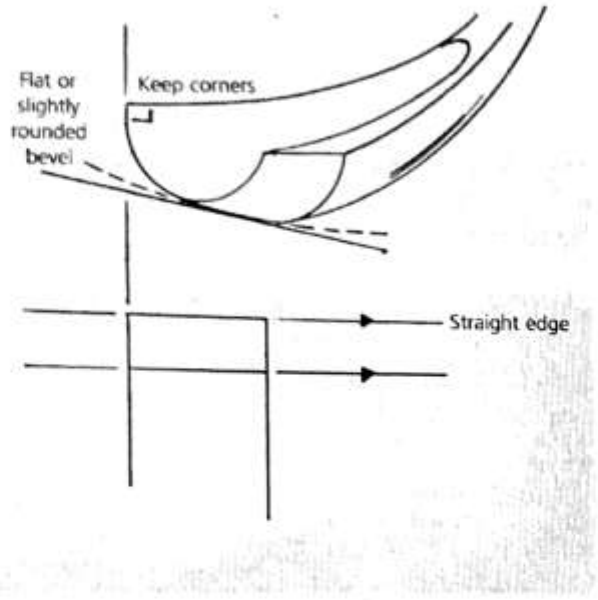


Fig 12.52 *Features of a correctly sharpened bent gouge – in this case a shortbent. Longbent gouges have the same requirements*

The bevel tends to be shorter and stronger on these tools, as they are subject to a lot of stress across the cutting edge, which therefore needs to be strong. The bevels tend to merge with the heel, and a slight rounding is permissible. Keep the corners (Fig 12.52).

The main problem is in holding these odd-shaped tools satisfactorily so that you can present them correctly to the grinding wheel or benchstones. Some experiment is needed to keep the bevel flat, as the handles will swing in quite a wide arc when the blade is rolling from side to side (Fig 12.53).

These tools can also be held in a vice and the flat side of a slipstone used on them, like a file.

BACKBENT GOUGES

These tools can mostly be sharpened with appropriate slipstones (Fig 12.54). Start as usual by flattening and straightening the cutting edge on the Arkansas benchstone. Place the benchstone side-on near the edge of the bench so that the handle of the gouge can hang free of the bench surface. Present the outer

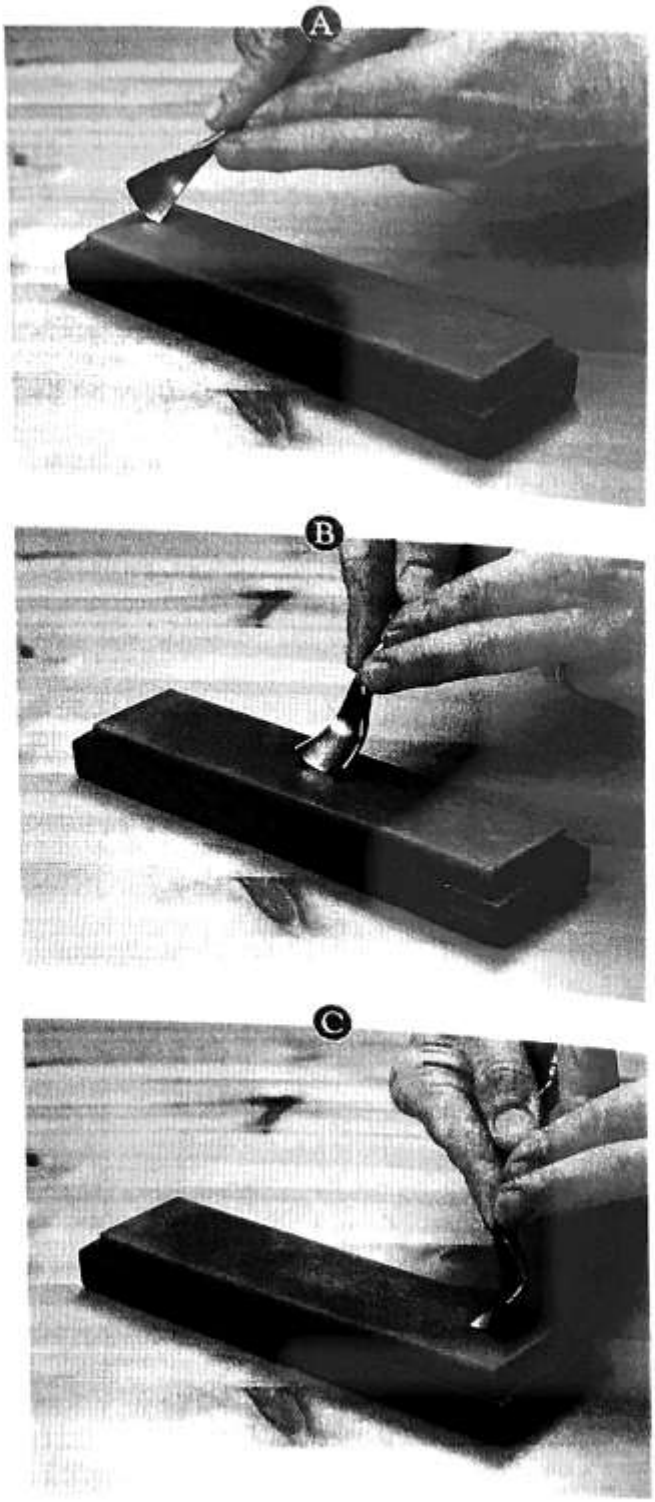


Fig 12.53 *The pattern of sharpening the outside bevel of a frontbent gouge is the same as for a straight one, except that presenting the tool is a little more awkward. (For clarity the oil is not shown)*

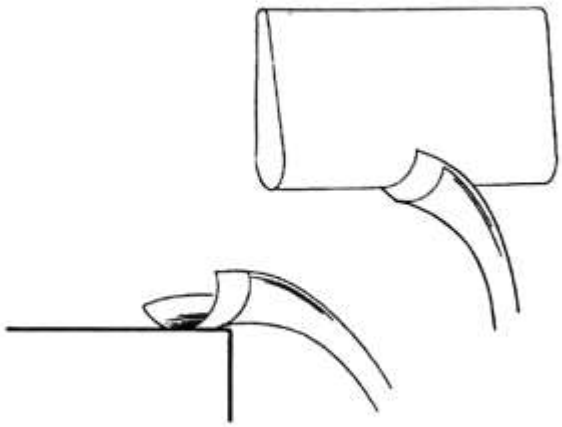


Fig 12.54 *A backbent gouge can largely be sharpened by slipstoning, cleaning the outer bevel on the benchstone*

bevel to the stone (Fig 12.55), clean up and continue to sharpen like a straight gouge. Keep the corners, and keep the outer bevel flat.

Work as much in-cannel with the slipstones (Fig 12.56) as outside with the benchstones, reducing the white line of light until it disappears. The inner surface wants to merge smoothly with the cannel, without any distinct bevel.

When stropping, only short strokes can be made, with the strop at the edge of the bench, if the outer bevel is to be kept flat. To make longer strokes you would have to lift the handle to clear the leather, which would roll the cutting edge.

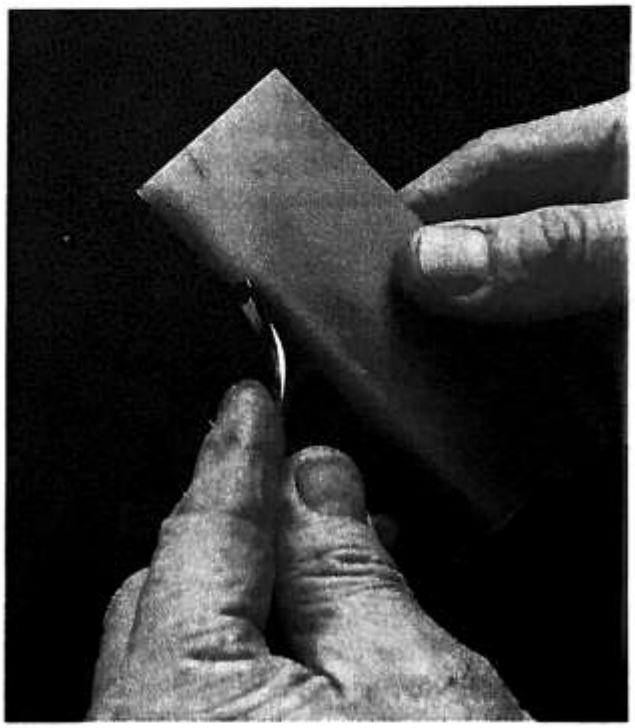


Fig 12.56 *Slipstones are used with the benchstone to sharpen a backbent gouge*

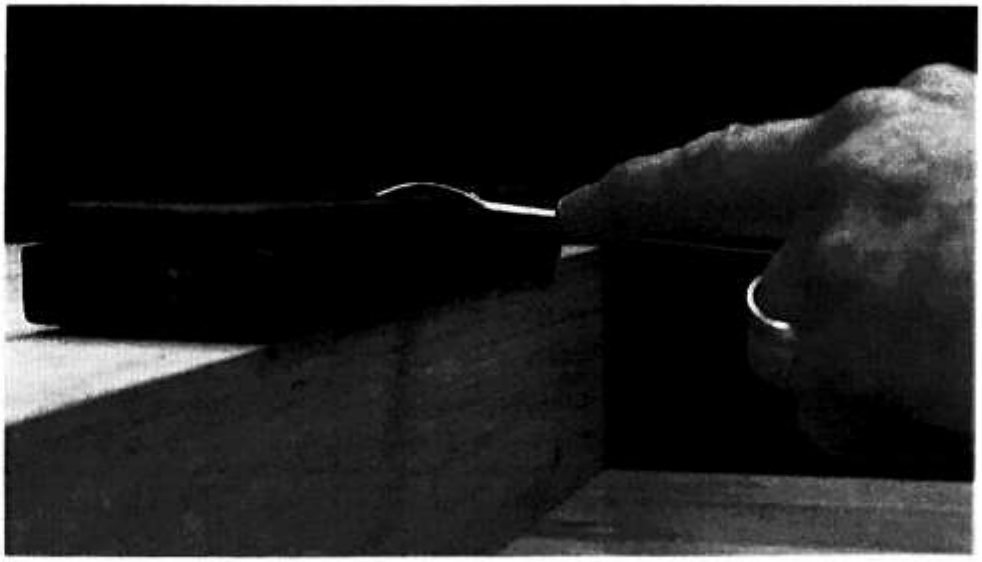


Fig 12.55 *The handle of the backbent must be lower than the benchstone; bring the stone forward to the edge of the bench to allow for this*

TAPERED TOOLS

Long- and short-pod, spade, allongee or fishtail tools present no problems that are not encountered in the parallel-sided versions. As they tend to have lighter, thinner or more delicate blades, it is easier to over-grind or over-sharpen them, so a little more care is needed, especially on the corners. I would suggest you do not use the grinding wheel at all, but start with the coarse benchstone and slipstones. The bevels tend to be longer, for delicate finishing cuts, and often merge into the main shank without a noticeable bevel.

TESTING FOR SHARPNESS

There must be something of the cavalier in carvers who evaluate, or demonstrate, the sharpness of a woodcarving tool by shaving hairs from the back of their forearm, or nicking their nails. Presumably they scythe through a lot of body hair when a large number of tools need sharpening.

At the end of the day it is wood that is being carved – and very different types of wood – so it makes more sense to test the cutting quality on spare pieces of wood put aside for this purpose.

Slicing across the grain with a sharp edge will leave a clean, polished cut with no scratch marks; the tool will cut at a low presentation angle and move easily – it may even make a happy '*ssssp*' noise.

Running a close series of grooves side by side is an excellent test (Fig 12.57). Assuming the wood is good, the ridges left between the grooves should remain clean and intact. If these ridges crumble or the edges of the cuts are torn; if the cuts contain scratch marks or ragged trails; if the cuts are dull or the cutting seems unduly hard work for the wood – some more sharpening is needed.

- Look at the line of light, with a magnifying glass if necessary, for telltale spots of white.
- Look at the profile of the bevel itself to see if it is rounded or 'rolled'.

MAINTAINING SHARPNESS

You could look at this the other way and ask: why do edges lose their sharpness? Given good-quality steel and tempering, there are several reasons:

- Most beginners wait too long before brightening the cut of their carving tools, and thereby make more work for themselves than need be.
- Tools can suffer from poor cutting technique.
- They may be stored badly.
- There is also the effect of the wood being carved.

Here are some guidelines to help keep tools sharp.

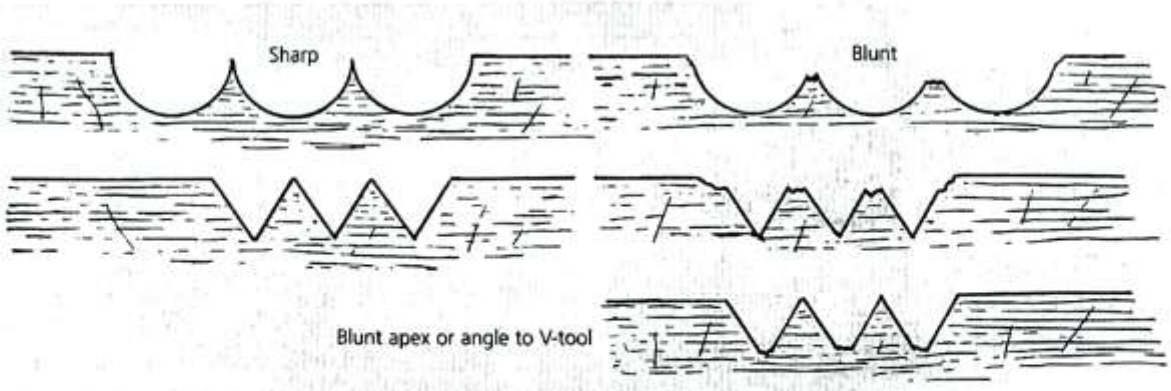


Fig 12.57 *Running grooves together in medium-density carving wood is a good way to check the sharpness of the edge*

STROPPING

- Never let woodcarving tools get into a really dull state – strop them as soon as loss of keenness is felt.
- Keep the strops on the bench, in their correct place, along with the working tools.
- Get into the habit of stropping the tools regularly. The tools become polished and bright, and this in itself eases them though the wood.
- Strop correctly, keeping the bevel flat and not rolling the edge.

Stropping a blade over a period of time gives rise to another effect which you need to be aware of. The leather of a benchstrop is only firm, not rigid like the oilstones. It 'gives' under the bevel moving along it, curling back to shape when the edge has passed. This flexing of the strop tends to roll the edge and round over the bevel (Fig 12.58). However, as the cut of the strop is very fine, the effect is only noticeable after a prolonged period of stropping. Even then, this rounding is not so easily seen, as the bevel becomes highly polished (Fig 12.59). It may escape a carver's notice that the tool is gradually becoming harder work, or the cutting angle a little steeper – the effects of a rounded bevel. I find I notice the effect after not using a tool for a while. There is a sense of having less control of the tool; I then take a look at the flatness of the bevel.

When a gouge has been used for some time and stropped regularly to keep it keen, try setting the bevel flat on the Arkansas stone, at the original angle, and making a small, sideways movement. The

Fig 12.59 The curved reflection on this highly polished surface is a clue that the bevel has become rounded

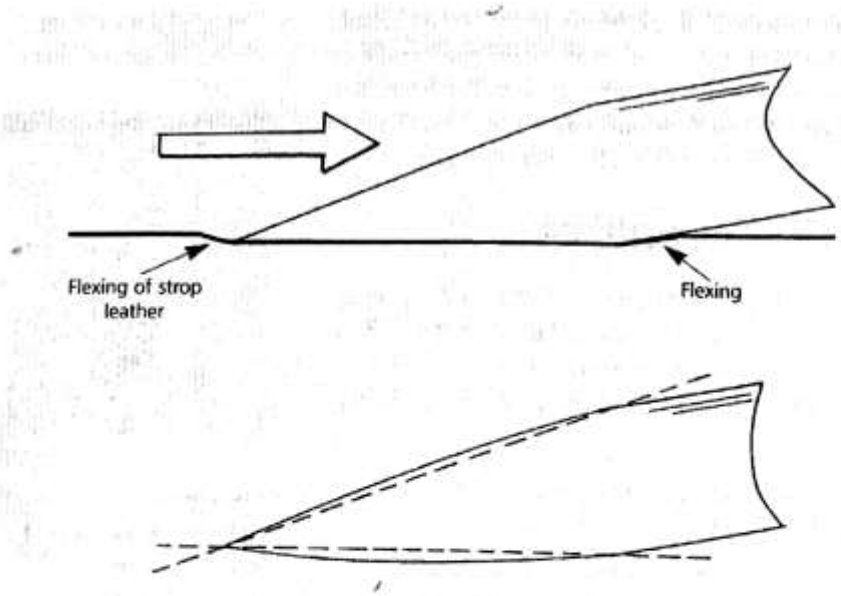


Fig 12.58 After a substantial amount of stropping, the bevel starts to become rolled, because even hard leather flexes before and after the edge is passed over it. A power honing wheel may produce a similar effect, and more quickly

Fig 12.60 The 'candle' effect: a final rim of polished metal towards the edge. The duller, honed surface creeps towards it as the bevel is flattened. The corners and straightness of the cutting edge will need checking over too

appearance of a dull point of abrasion in the middle of the bevel, contrasting with the highly polished metal, indicates the bevel is rounded. A chisel can be tested similarly.

Resharpen the blade in the normal way and you will see that the initial dull point of abrasion becomes a line; it then quickly spreads over the shiny bevel towards the heel and the edge as the bevel flattens. Eventually there is only a rim of shiny metal at the very edge which has not, as yet, touched the stone. This bright margin is traditionally called the **candle** (Fig 12.60). Do not be tempted to lift the handle to get rid of it quickly, but carry on with the bevel flat. Stop when the candle is put out, but be careful not to over-sharpen. Begin the cycle of stropping again.

Carving technique

Tools also become blunt and damaged as much through bad carving practice as failing to strop. Tools should be used to *cut* the wood properly – prising or levering is not cutting, and will only damage the edge of the blade.

- Do not drag the cutting edge across the wood, but enter and leave the cut cleanly.
- Do not use the blade to lever or prise wood chips away. Cut the tool in, cut it through and cut it out.
- If a gouge gets buried in the wood, try *gently* moving the tool from side to side – *along* the cutting edge, not against it. This is not a good idea with quick gouges. If such gentle persuasion does not work, another tool is needed to carefully remove wood from the sides of the embedded gouge.
- U-shaped gouges are vulnerable to cracking when they are forced too deeply into wood. Pressure on the bevels squeezes the two sides together. Never compel these veiners or fluters to cut too much, or too deeply, at once.

Storage and care

Care is largely a matter of habit. Start with good-quality tools, then:

- Avoid damaging the edges, by using the bench discipline suggested in Chapter 7 (pages 111–13).
- Suggestions for careful storage are made in Chapter 7 (pages 107–10). Check the edges before putting the tools away in the condition you would ideally wish to find them in (Fig 12.61).
- Some carvers, when they get to the finishing stages of a carving, have a session of checking every edge for perfect sharpness and touching up

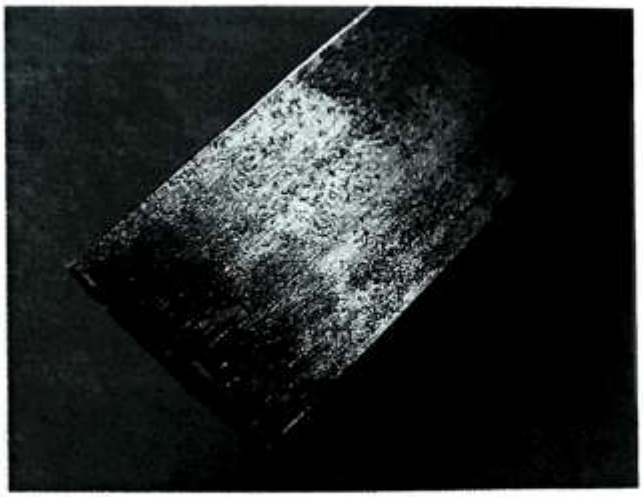


***Fig 12.61** The notch in the edge of this gouge should be dealt with before putting it away*

any scratch marks they may have let ride in the rough stages of carving. Odd scratch marks may be acceptable where a surface will be sanded or overcut to finish, but not where the naked cuts are left to be seen.

EFFECT OF THE WOOD BEING CARVED

- Some woods (such as teak and some mahoganies) contain calcium deposits that dull edges. If this is happening, there is nothing to do but carry on and have a final sharpening session before making the finishing cuts.
- Particles of abrasive remaining in a sanded surface will also take the keenness off an edge, so avoid sanding parts that will be carved later. This applies especially to carving turned work, most of which is sanded on the lathe.
- Remember that different woods require different strengths of bevel. If a cutting edge is tending to break up, it probably means the bevel is too long.

PRE-SHARPENED TOOLS

Most carving tools are bought by the increasing numbers of people wishing to carve as a leisure activity. Understandably, they want to get into the wood straight away, without having to sharpen the tools first. Tools catering for this market are available today. At best, their bevels are set at what seems to be a good average angle, but in some cases the angle might just be what the operative felt like that Friday afternoon; 'ready sharpened' most often means the simple expedient of polishing in a secondary (micro-) bevel. They may be sharpened by an automatic process or with some degree of hand skill, but they never have inner bevels and are most often shiny and polished.

In my experience, however, there is an intrinsic problem with these ready-sharpened tools. It is not a matter of the steel, the tempering or the overall shaping of the tool – all of which may be excellent – but the strength of the edge left by the sharpening process itself.

Certainly a pre-sharpened edge looks sharp – but start carving and it will be noticed that the initial, shiny cut quickly breaks down to leave trails of scratches. When a blade is sharpened on grinding and buffing wheels which drag the metal *forwards* – away from the cutting edge – a microscopic feathering of the crystal edge is produced. This is weaker, or less supported, than when the metal has been drawn back from the edge – towards the handle – or sharpened across it (see Fig 12.1). After a short while the cut surface is left with lots of little scratches, which is entirely unsatisfactory for a finish straight from the edge.

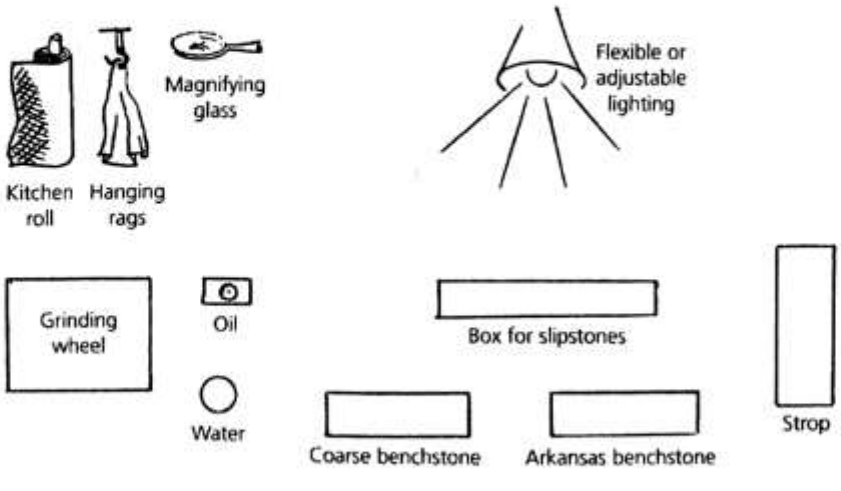


Fig 12.62 *A possible arrangement for a sharpening area*

Once these tools have been resharpened, using the normal honing methods, the problem vanishes and the quality of the tool can show itself. So this is a point to bear in mind if you are coming new to woodcarving: by all means start with a pre-sharpened edge, but make it your business to find out how to sharpen and maintain the edges properly, rather than just expediently.

THE SHARPENING AREA

Time spent on sharpening is never wasted, but contributes directly to the quality of the woodcarving as well as the enjoyment of carving itself. Ways and routines of keeping carving tools keen are worth cultivating. If there is room in the workplace, there are many benefits in setting up a permanent area near the bench specifically for sharpening woodcarving tools. The area set aside need not be very large: just enough room to work comfortably and leave important items for sharpening ready to hand. The space warrants good lighting, perhaps its own adjustable light. The grinder, with its cooling water, can be part of the arrangement, or nearby and quickly accessible. The benchstones can be laid out next to the oil; slipstones conveniently placed; and oil, stropping paste, kitchen paper and rags handy (Fig 12.62). Strops are normally kept on the carving bench next to the working tools.

Another option is a pull-out drawer or ledge – perhaps fitted to the bench – in which the sharpening stones are placed. This is not such a good arrangement, as wood chips and dust will always find their way in.

Having the sharpening and carving areas separate helps keep dust and wood chips from one, and oil and dirt from the other. Instead of getting out the benchstones each time they are needed, they are simply waiting to be turned to.

Make the sharpening area pleasant; see it as part of your whole work, and keep it clean. The idea is to make the means of sharpening woodcarving tools so easy that sharpening becomes no bother whatsoever – and carving itself benefits.

SUMMARY

- One aim of this chapter has been to instil self-reliance by providing a repertoire of techniques to deal with all shapes and states of carving tools, enabling them to be turned into exactly what you need to achieve the best work.
- In this chapter and the preceding ones we looked at some fundamental ideas about 'sharpness'; what features contribute to this end; the necessary equipment and its correct use; how to go about sharpening tools in detail; and, finally, how to retain sharpness.
- It was pointed out that sharpening is a precise skill, but well within the capabilities of someone who has the manual dexterity and the desire to carve in the first place. With the correct approach, the skills of sharpening woodcarving tools can be developed rapidly to an almost instinctual level.
- Like any skill worth acquiring, it does take practice. It often involves learning by mistakes and by trying to improve the performance of a tool every time it needs sharpening or touching up. It is not that you cannot carve until you have perfected the skill of sharpening, but by always seeking to improve, doing the best you can and trying for a little better next time, the sharpening will soon become second nature.
- The sharpening practices of individual carvers vary, with 'grey' areas where opinions differ. What matters is the experience any carver is having of the way a carving tool is cutting, and how this fits with the actual carving process. Both the final carving and the process of achieving it matter to the carver.